The Builder.

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The Consulting Architect.

IT may appear hypercritical to take exception to the title of Professor Kerr's new work,* and the difficulty of finding a suggestive and a short title for such a book may be admitted. Still it is necessary to explain that Professor Kerr treats in this book of the duties and liabilities of an architect in relation to what may broadly be termed legal questions connected with buildings. He is not concerned with an architect's business when he is occupied in designing buildings. In other words, he treats of the duty of an architect when he is called in to advise or to assist persons who are busied with disputes upon such matters, among others, as structural damage, easements generally, and the easement of light more particularly. It follows from this that such cognate subjects as arbitrations, evidence, advocacy, and so on have to be touched on. Nor ought we to omit mention of the useful chapter, or section, as the author prefers to call it, on "Building Act Questions (London)."

There are obviously two essential elements in regard to such a work as this, which are absolutely necessary if its object is to be attained. The first is, that the legal principles upon which much of it is necessarily based should have been accurately grasped; and next, that not only should the writer have a large experience, but that he should clearly appreciate the reasonable view to be taken of the questions which must come before what we will, with the author, call "the consulting architect." There can, we think, be no doubt at all that Professor Kerr is sound in his law, and shrewd in his appreciation of the position of matters. The advice given is throughout full of prudence and practical wisdom, and could all architects act up to the precepts to be found in this work their clients would have good cause to congratulate themselves. But we fear, until this world is somewhat more of a Utopia than it is at present, that the soundest advice will be often useless, having regard to the want of temper, the grasping spirit, and the vindictiveness which are so often shown even in the most trivial of disputes. We have said that Professor Kerr is a sound lawyer, yet there is one point of some importance upon which he makes an assertion for which we should have been glad to have seen his authority. "The mere obstruction," he says on p. 64, "of the light for one year is not enough to extinguish the easement, unless notice of that intention has been first delivered." The Prescription Act speaks of the owner of the dominant tenement having notice of the interruption of the easement. Lord Justice Fry, it is true, once intimated an opinion that a written notice was required, but that point has not, we think, ever been actually decided, and the general view is that all the notice required is such as will make it clear to the owner of the dominant tenement that there is an obstruction put up by a particular person.

It may be well to give an example, before proceeding further, of Professor Kerr's sensible and prudent advice. We find an instance in regard to this subject of the obstruction of light, one which, more than any other, perhaps, requires temper and judgment in the consulting architect. "As a general rule," he says, p. 79, "the substitution of a new window, of improved size, form, and quality, would cure any grievance whatever." Perhaps this is putting the matter too broadly, but certainly it applies to many cases. Professor Kerr then proceeds,—"But, of course, there is nothing in the law of England that will compel a plaintiff to accept a readjustment even of an easement over another man's property. . . . But, nevertheless, the suggestion has been made occasionally, and perhaps as the courts become more familiar with the principle and practice of compensation they may be disposed to allow or even to invite such proposals. It is needless to add that, in any process of settlement in which architects take the place of lawyers, the principle of re-adjustment is especially capable of being acted upon." This advice is thoroughly sound, and many disputes as to light might be nipped in the bud if the architects for the respective parties would adopt the prudent and proper course here suggested. In many cases, no doubt, they do give this advice, but in others there is no doubt that the respective architects or surveyors are keener for a fray than for a settlement, and in such technical matters as these lawyers very often will leave the question of the settlement to the architects, who are the persons best fitted to arrive at fair terms. We should like also to call attention to the thoroughly prudent advice contained on p. 63 as to the "erroneous attitudes of complainants" in regard to the same question. We do not adopt Professor Kerr's advice and strictures wholesale, but we advise its perusal by all who are thinking of litigation for infringement of light, and by all architects who are called in to give advice in such circumstances.

We are very glad that Professor Kerr recognises that one of the functions of the consulting architect is to be consulted in regard to sanitary matters. In all disputes or difficulties of such a nature a competent architect ought to be a much safer adviser than a so-called sanitary engineer or a doctor. This is one piece of advice which the author gives:—"The consulting architect has to bear in mind that he has not to do the doctor's work or the lawyer's. Probably in every case the chief question which he will put to himself, and report upon if he be allowed, is how the structural defect, whether it has or has not been the cause of the mischief, can be, probably very easily, remedied; as a practical man he may very generally say that the dispute ought wholly to turn upon this, all else being mere wrangling." The Professor then goes on to point out how an architect will in such cases generally advise a fair compromise, unless, as is very seldom the case, there has been some kind of legal fraud. This is proper advice, and we may add that a competent and high-class architect is much more likely to settle the matter for the benefit of all parties than any other person. He is not a man with a hobby, as sanitary doctors or sanitary engineers often are; he is acquainted with all the details of buildings and with the desires and the wishes of clients, which is not the case with the previous classes, and he has an authority which, if the matter comes to the execution of actual work, neither the engineer nor the doctor can possess.

The chapter on "Leasehold Questions" deals, of course, with a good many matters of great importance in the relations of landlords and tenants, and matters which are often the occasion of considerable heart-burnings. The author brings the light of common sense to bear on some of these questions. "The lessor ought not to expect, or to be allowed to expect, that his house is to be surrendered to him in such a condition of fresh repair as to make an incoming tenant fully comfortable at the expense of the outgoer; this kind of completeness must be accomplished at the cost either of the incomer or of the landlord, as may be agreed between themselves. On the other hand, a lessee who has covenanted, in the customary language, to keep the house in proper repair, must not be allowed to suppose that he is to leave it all out of condition." The author puts it that the house may come from the lessee's hands "substantial but shabby": the signs of current wear should appear, along with the proofs of current repair. This is the fair and equitable way to put it; but the London landlord does not see these things at all clearly; and, as a solicitor once pithily told a tenant who con-

* The Consulting Architect: Practical Notes on Administrative Difficulties and Disputes. By Robert Kerr, F.R.I.B.A., &c. London: J. Murray. 1886.

sulted him as to his grievances against his landlord, "the law is always on the side of the landlords."

The philosophy of repainting is touched upon; and the difference between the old-fashioned plan of binding the tenant "to keep the paint in repair" like everything else, and the modern and now almost universal system (in London) of binding the tenant to paint the outside once in three years, and the inside once in seven years, is thus discriminated:—

"The difference of principle" (between these two systems) "is easily explained. Oil paint is primarily a preservative coating of carbonate of lead (white lead), with linseed oil as its vehicle of application whereby to protect from the oxidising influence of the atmosphere such materials,—iron is a most notable example,—as especially require it. Then, by adding various pigments, and using various modes of finish, this coating is made to produce agreeable effects of colour and surface decoration, including, perhaps, the somewhat expensive imitation of costly materials" [this latter crime, however, is greatly on the decrease]. "Accordingly, the old covenant to keep in order the mere paint was a matter of substantial repair, while the more modern covenants to repaint periodically refer to the decorative effect also, according to its degree."

That is so, and a most unreasonable thing it is that the landlord should claim power to interfere from time to time with the matter of internal decorative painting, which during the tenancy affects no one but the tenant and his private friends. External painting, which concerns the public appearance of the property, stands on a different footing; it is the landlord's interest to keep his property in a presentable style before the public eye, as well as the tenant's interest that his house should look respectable; and in more enlightened and less duke-ridden cities it is the landlord who binds himself to a certain amount of exterior painting, instead of binding the tenant to do it for him. But the fact is that the average form of lease on the majority of large London properties is so utterly unreasonable and onesided in its claims on the tenant, that the result is that some of its conditions are habitually ignored on the one side and evaded on the other; indeed, Professor Kerr points out that, in practice, if the tenant only takes care to paint the inside in the seventh year and the outside in the third year before the termination of his lease, he may avoid the claim for dilapidations and have the benefit of the new work during his occupation. We are glad to observe also that the author reprobates the absurd practice of demanding premiums on the transfer of a lease, often as a mere concession to habit, and for no commercial reason of any kind which could be put to the purchaser in figures.

In the section on "Questions of Building" there is a great deal of most judicious advice as to matters arising between the architect and contractor in the course of carrying out a contract. In regard to the quantities question, Professor Kerr apparently leans towards what may be called the modern theory, that the architect should be responsible for the quantities, though he does not positively adopt it. Touching on the frequent provincial practice of the architect supplying his own quantities, he refers to the idea, apparently with approval, that the architect is the fittest person to do this, inasmuch as he alone knows what is in his own mind. The answer to this, which seems to be overlooked, is that the specification ought to be so methodically and clearly drawn up, and the drawings so clear, as to show, beyond any doubt, what is in the architect's mind. Laxity and vagueness of specification is at the bottom of a great many of the disputes which arise over the execution of contracts. It is the duty of the architect to specify and draw so clearly that there can be no doubt "what is in his mind"; but, having done this, we fail to see that it is part of his profession to ascertain what is the quantity, in run or in area, of each portion of the work which he specifies. That is a matter which does not concern the object which he has in view, the production of a satisfactory building. That a certain number of doors should be made after a certain design described and shown, is a matter for him to decide; precisely what quantity of work of each kind they contain is really a question only of interest to the contractor who has to say for what sum he can execute them. We see no essential objection to the architect taking out and furnishing his own quantities (provided always that he is paid by his client and not by the contractor for so doing); all we say is, that he may be better employed on higher matters than in mere mensuration of quantities; that if he is in earnest in the study of the higher elements of his profession he ought to be better employed. This consideration, of course, trenches on the everlastingly vexed question, whether architecture is essentially a business or an art, concerning which we hold that there should really be no two opinions. If it is not an art (remembering always that there is a fine art of planning as well as of designing elevations and details) the architectural profession has very little *locus standi* worth speaking of.

The section on "Architects' Disputes and Etiquette" propounds views which in the main most of us will be disposed to assent to. In regard to "uniformity of practice," however, Professor Kerr holds up the uniformity of commission standard more decisively than we should be disposed to do, nor does he even hint at the possibility that there may be any other method of payment (except for a special class of work) than that of a percentage commission. This is a subject on which, however, we opine that the last word has not been said. There is a certain convenience to architect and client in the 5 per cent. commission practice, but it is nevertheless (like some other convenient things) absolutely illogical; and there would be many advantages in substituting payment by fees according to circumstances and the standing and talent of the architect, and the degree in which his services are sought after; not the least of which would be that in that case an architect of genius and fame could afford to repay himself by higher fees on a smaller number of works, which he could really give his own full attention to. He would probably make less money actually, but he would make it in a way more satisfactory both to himself and to the public.

There is, however, very little in the book to which we should be disposed to take exception; it is a most useful and suggestive one, judicial and balanced in tone, and has the merit of being written in an admirably clear and readable style. We may conclude by expressing our entire concurrence in the opinion, given in the chapter on "Architects' Disputes and Etiquette," that "the social standing of a profession is to be exactly measured by the extent to which mutual courtesy, good feeling, and above all good faith, are prevalent among its members." We hope such excellent precepts may always be put into practice.

THE PRESENT STATE OF STONEHENGE.

THE present condition of one of the most remarkable and well-known pre-historic relics of this country has recently formed the subject of a very careful report, to which we have already referred, by a deputation of four provincial members of the Wilts Archæological and Natural History Society to that body. They relate that in the course of the autumn and winter of 1885 urgent appeals had been made from time to time desiring the Society to exercise whatever authority it possessed in defence of this national relic, which was reported to be undergoing daily injury at the hands of an unchecked public. Thereupon the Society determined to depute some of its officers to examine the site and report upon the subject. This deputation, consisting of the Rev. A. C. Smith, and Messrs. H. E. Medlicott, W. Cunnington, and H. Cunnington, visited Stonehenge on the 20th of July last and carefully examined every stone, noting down its exact condition with special reference to injuries of recent date, and eventually submitting the results to the Society in a report of which we are enabled to give a summary. In 1884 Mr. Cunnington had printed in the magazine of the Society (vol. xxi.) his notes on the fragments, to which was added an illustration consisting of a ground plan of the stones in their present condition, numbered according to the following system. Mr. Cunnington takes his stand at the entrance to the great or outer circle, and looking towards the interior commences with No. 1, the upright stone or jamb on the left hand; he carries his numeration right round the whole circumference of the great circle, until he comes round to stone No. 25, which forms the right-hand jamb of the entrance, with the lintel, No. 25 L, resting on Nos. 1 and 25. He then proceeds to the second or inner circle, and in like manner enumerates all the stones from 26 round the circle to No. 45. Mr. Cunnington then proceeds to the left-hand spur of the exterior horse-shoe, or semi-ellipse, the stones of which he numbers from 46 to 55, and then to the inner horse-shoe, which he consecutively numbers in a similar manner from 56 to 68. Within this horse-shoe lies the stone or slab A, not far from the centre of the two concentric circles, and at or near to one of the focuses of the horse-shoes or semi-ellipses.

Let us now see what the deputation has to say as to the condition of these stones. No. 1 they find has been slightly injured by recent chipping and the cutting of letters upon it; No. 2, the next upright, has been untouched of late years. Upon these two rests the lintel, No. 1 L, of which they say nothing, and we may therefore presume that it has not been interfered with. No. 3 stands alone, without lintels. There are two very small chips upon it, of recent date. The next standing stones, 4 and 5, support a lintel, No. 4 L on the plan. Of the lintel they say nothing, but No. 4 has been chipped recently, and No. 5 is chipped in two or three places. Of the next group, Nos. 6 and 7, with lintel 6 L, No. 6 was found to be much chipped, and No. 7 to be very much chipped. The next stone, No. 8, lies out of the true circumference of the circle, and they found its original surface was not only injured, but completely destroyed, though with not much additional damage of late years. No. 9 stone is in two portions, *a* and *b*. It is injured in two places. Continuing their progress round the circle, stones Nos. 10 and 11 were found by the committee of inspection to have been slightly scratched. The next two stones, Nos. 12 and 13, lie prostrate, the one having its surface very much damaged, the other considerably damaged. No. 14, which is inside of its original position on the great circle, is uninjured of late, and No. 15 very little injured. Here occurs a considerable *hiatus* in the rank of standing stones which compose the outer circle until we come to No. 16, which is not in its original position. It was found to be worn by being constantly walked upon, but otherwise not recently damaged. Its lintel, No. 16 L, lies by its side, but has not been much injured recently. Then comes the trilithon of two standing stones, Nos. 17 and 18, supporting the lintel 17 L. Of these No. 17 was found to have been very badly chipped, and this recently, one piece measuring 10 in. by 8 in. had been taken off, but No. 18 is not seriously damaged. The report says nothing of any injury done to the lintel. The next standing stone, No. 19, is declared to be very badly chipped, with large pieces gone from it in many places. No. 20 lies prostrate; it is damaged only by footmarks. No. 21 is also injured by being walked upon, and the lintel No. 21 L, now thrown down from its position, but still lying between Nos. 21 and 22, its original supports, is badly worn by footmarks. No. 22, however, is in good condition. No. 23 still stands in its original *locus*; some initials have been recently cut into it and the stone is chipped on the outside. There is a crack on the north side of this stone, which has increased very much recently, and it was recommended that it should be stopped at once with cement or otherwise attended to. The standing stone, No. 24, was found to be in good condition, and the lintel 24 L, which rests on this and No. 25, has not been pointed out in the schedule as having sustained any

injuries. No. 25, the standing stone on the right hand of the person entering, and *vis-à-vis* to No. 1, with the lintel No. 25 L overhead, is badly damaged; the lintel itself having escaped the untender mercies of the iconoclast.

This completes the outer circle. The stones of the inner circle are neither so large nor so numerous as those we have already described. The first, No. 26, has sustained no damage. The stone is very hard,—too hard, in fact, to be easily cut. No. 27 is not injured, but it was evident that rabbits were at work beneath it. No. X, which leans upon this, had been much walked upon, to its manifest detriment. Nos. 29 and 32 were not damaged, but No. 30 had been pecked at a little with some sharp instrument, but was not much injured. No. 31 is in two parts, *a*, *b*, the former being not much injured, though slightly chipped; the latter has sustained two chips. No. 33 bears chips, but they are not of very recent origin; the damages of No. 34 are also not recent, but a large piece was broken off this stone about fifteen years ago, and the report states that rabbits are at work below it. Nos. 35 to 41 have been worn by the feet of those who have walked over them, and thus damaged more or less, but no chips or cracks are found upon them. No. 42, which appears to be in its original position, is slightly chipped, but otherwise unhurt; and No. 43 also is in its original position, and in good condition, but a little chipped. No. 44 has been chipped, but slightly foot-worn; and No. 45, the last stone of this inner circle contiguous to No. 26, the first stone, is in fair state of preservation.

We now pass from the two concentric circles to the horse-shoes, or imperfect ellipses, which they enclose. The first or outer horse-shoe contains ten stones, Nos. 46 to 55, as well as two lintels in position, and three lintels overthrown. Nos. 46 and 47 are in pretty good order, being only very slightly damaged; the lintel which they carry, No. 46 L, being out of the category of damages notified by the deputation. To this megalithic group, or *pylon* of three stones, succeeds another, 48, 48 L, and 49. No. 48 was found to be very little injured. It attracted the notice of those who inspected it on account of the curious diagonal vein of infiltrated silex running across it. There are no injuries reported to No. 48 L, but 49 is chipped, and some letters have been recently cut upon it. No. 50 lies prostrate and in two parts, *a* and *b*. The former of these is very much worn by the feet of those who have walked upon it, which have entirely destroyed its surface; the latter is in much the same condition, and rabbits have burrowed below it as well. The lintel, 50 L, has its mortise much worn by feet, but is otherwise in fair condition. The leaning stone, No. 51, is in good order, but bears one chip of recent date. The report states that this stone does not appear to have gone any further over in the incline, which it showed many years ago. The overturned trilith, Nos. 52, 52 L, and 53, bears in all three cases the injurious marks of many feet. No. 52 has been very much damaged by boys, who made a slide down it, and rabbits have burrowed beneath. The lintel has its edge worn away, but in other respects has not been recently damaged. The shattered group, Nos. 54, 54 L, and 55, consists of no fewer than seven pieces; the first two being each in three pieces, and lettered by Mr. Cunnington *a*, *b*, *c*. No. 54*a* is damaged by foot-marks, and there are rabbit burrows below; Nos. 54*b* and *c*, are in fair order; Nos. 54 L, *a* and *b* have surface injuries; but the injuries to 54 L *c* are not very material. On the other hand, No. 55 is very badly chipped. This completes the outer horseshoe.

The stones of the inner horse-shoe are thirteen in number,—56 to 68,—three of them being covered up, and therefore protected from injury, viz., 57, 62, and 67. No. 56 is very slightly chipped. No. 58 chipped, cut, and badly scratched; 59 in good order; 60, 61, and 63 damaged by feet; 64 is upright and in good order, apparently in its original position; 65 and 66 have been recently chipped and carved with initials; 68, the last stone of this inner horse-shoe, is worn by feet. The stone "A," which lies partly under 50*b* and 50 L, is also very much worn by the feet. This completes the report on the stones forming the area of Stonehenge; but there are three outlying stones which the Committee had also under their notice. Of these, the first is (*a*) lying to the east-south-east. About nine years ago a fire was lighted against this stone, which caused a large piece to split off. The second stone (*b*) is known as the "Slaughtering Stone." An attempt has been made at an uncertain period to remove a corner of it by sinking six holes in a line, after the manner of breaking sarsens which is now practised. The "Friar's Heel," or "Devil's Heel" (*c*), is much chipped, and very much inclined. In addition to all these injuries, it should be added that scribbling with chalk has been practised all over the stones, and though such marks may not be injurious they are disfiguring, and should not be permitted. We are glad to notice, however, that steps have been taken to arrest the burrowing of rabbits, and no further injury need henceforth be apprehended from that source. The deputation are of opinion that the time has at length come when this grand monument should be properly protected from the irreparable injuries to it which are constantly going on at the hands of the thoughtless and the mischievous. This protection may be carried out by two methods, first, by a sunk fence or "ha-ha" at a considerable distance beyond the trench which encircles the precincts, to keep out all carriages and animals, at the same time not destroying the wild character of Stonehenge by any visible barrier; secondly, the appointment of a responsible caretaker, with power to enforce regulations with which he would be provided, to prevent picnicing within the area; and, above all, to stop any injury to the stones, such as chipping, marking, scratching, or walking over them. A very small entrance-fee would probably provide amply for the salary of such a person, and no honest visitor would grudge it.

As for the restoration of Stonehenge, the deputation very rightly recommends but little, confining its advice to three matters of a precautionary nature, which they think should be carried out as early as possible. These are,—(1) Nos. 6 and 7, with the lintel belonging to them, should be pushed back into their original plumb, and secured, when the unsightly wooden props and buttresses could be removed; (2) Nos. 25 and 1, the entrance jambs, with their accompanying lintel, need to be pushed back into proper and original position in like manner, and so secured before they lean farther towards the outside, and thus the threatened fall, which, if this is not done, must take place at no very distant date, be averted; (3) the "Friar's Heel," which is very much inclined, must be carefully examined, and if it is pronounced unsafe, be securely fixed. At the same time, the deputation has not recommended the replacement of the tall leaning stone in an upright position, although the readjustment of this remarkable feature has been advocated. Its fall would be a calamity, and it should be secured from imminent danger. To these immediate steps the report adds one suggestion in conclusion. They most strenuously advocate the re-erection of the great trilithon which fell in 1797; the exact position of it is undoubted, and its replacement has been frequently urged by distinguished antiquaries, notably by the Royal Archæological Institute when it met in Congress at Salisbury in 1849 under the presidency of Mr. Sidney Herbert. Should the proper appliances for re-adjusting the stones 6 and 7, and 25 and 1, mentioned above, be procured (whether by permission from the Royal Dockyards at Portsmouth or elsewhere), it would seem an opportunity not to be let slip now, if ever, to re-erect the great trilithon, which, if re-placed in position, would add so much to the grandeur and imposing appearance of Stonehenge. The prostrate condition of this group is lamented by many. In conclusion, we hope that the report will bear good fruit, and result in the security of Stonehenge from material decadence, which appears only too plainly to be overhanging it.

NOTES.

THE application of the Metropolitan Board of Works to the Chancellor of the Exchequer for the continuance of the Coal and Wine Dues after July, 1889, is a case in which it is unusually difficult to strike a balance between the conflicting arguments. On the one hand it is urged that the impost is almost imperceptible in its pressure; that it has been the means of endowing London with public works and improvements on which nearly ten millions sterling have been laid out; and that if the dues are allowed to lapse, further improvements, urgently called for, can only be provided by additions to the rates. On the other hand, it is objected that the 450,000*l.* a year thus raised is dealt with without any control on the part of those who pay the dues; that the expenditure of the Metropolitan Board of Works, amounting to upwards of twenty-five millions sterling on works, and some ten millions sterling in loans, advances so rapidly as to be a source of danger; and that it is desirable that such continued expenditure should rather be checked than facilitated. It is rejoined that out of the thirty-five millions raised by the Metropolitan Board, nearly ten millions of loan have been paid off. But it is difficult to see how this affects the question. The sum, whether in the form of liability in trust or of past expenditure, is an addition to the rateable value of, and thus to the cost of living in, the metropolis. The rateable value of London was six millions sterling in 1841, ten and a half millions in 1855, and twenty-eight millions in 1883. It is now thirty millions, showing an increment of a million a year, or 3·57 per cent., which is very much more rapid than the increase of population.

A MUNIFICENT expenditure in public works may endow a country with noble buildings, and render a great capital one of the wonders of the world. But the question of cost is one with which it is perillous to trifle. Royal Commissions have done little more than attest that the question of cost of living in London is, if not insoluble, as yet unsolved. The steady outlay of half a million a year on improvements is rapidly transforming the architectural aspect of London. But with equal certitude is it raising rent, rateable value, and cost of living. The set of modern opinion has been in favour of doing away with the self-supporting character of public works, as in the case of the abolition of turnpikes. That business is thus facilitated, and that considerable advantages are thus gained, is undeniable. But that these advantages are acquired at a cost which it is not easy to reckon, and which, at all events, has not been reckoned, is no less true. In 1871 the rateable value per inhabitant of the metropolis was 6·09*l.* In 1881 it was 7·22*l.* This rise of 18 per cent. in ten years represents, more or less, the rise of not only rates, but rent, taxes, and almost every element of the cost of life. We should be the last to undervalue the advantages of sanitary provisions, or of the facilitation of traffic by the improvements of streets, Only let the cost of each be clearly ascertained; and let us not fancy that we shall not have to pay for an outlay of 450,000*l.* a year because the rate collector does not happen to call for it as a distinct charge. It would probably be safer in all respects if he did.

AS railway construction in England becomes more quiescent, for the reason that there is scarcely any room left for extension, our colonies take up the running vigorously, and open up fresh fields for engineering talent. Canada is particularly energetic in this respect, and has, in proportion to her population, built already more railways than any nation in the world. No sooner was the Canadian Pacific line open,—a line as gigantic in its conception as it will be valuable to English and Canadian commerce,—than it is followed by a new undertaking, that of the Hudson's Bay Railway, which, though not nearly so long or on so grand a scale, will be of immense importance as a supplier of meat and bread stuffs to this

✠

country. The distance from Liverpool to Port Nelson, on the western coast of the bay, is about the same as the other sea routes, but from thence to the Red River Valley and Winnipeg it is shorter by several hundred miles than the routes by New York, Halifax, or Montreal. A western extension will branch off to Regina, so that in point of fact the enormous food resources of a vast Canadian area will be landed in England in a little over a fortnight. It is true that during the severest portions of the year the route will be unavailable, but for at least from four to six months the Hudson's Bay keeps open, and the cooler temperature will be a decided advantage for a great food traffic.

IN this number, under the heading of "Cases Under the Metropolitan Building Act," a case is reported which may have its good effects on health. Sanitarians denounced "back-to-back" dwellings, while speculators erected them and filled them with large families, until the Act of 1882 seemed likely to prevent the erection of such insanitary dwellings in all new neighbourhoods in the future. Section 14 of that Act makes it imperative that *every* new building, on a site not previously occupied by a building, shall have in its rear a certain amount of open space directly attached and exclusively belonging thereto, unless the Metropolitan Board of Works otherwise permit. The spaces seemed still very small; but sanguine people declared that on new sites "back-to-back" dwellings were now for ever impossible; and that every new building used for living in would have air-space both in front and rear. Ingenuity was, however, directed as usual to finding a way through the Act of Parliament, and dwellings in mews were deemed fair subjects for subtleties. Such buildings are often wide in frontage, so as to get the requisite space for stable, coach-house, and harness-room, all in a line; much depth (say 17 ft. or 18 ft.) being consequently not required. Thus all the important rooms can be lighted from the street; and it has been argued that the 14th section of the Act of 1882 does not supersede the 29th section of the Act of 1855. Mr. D'Eyncourt decided, among other things, that it does; and his decision will be useful as a precedent,—being a good reading of a good law.

AT the meeting of the Bath Town Council on Tuesday the question of the remains of the Roman bath, and the extent to which they might, would, or should be encroached upon or hidden by the new buildings, was debated with less of acrimony and more of common sense than on some previous occasions. Mr. Walker moved a resolution, in general terms, that the intersecting brick walls built within and through the remains, should "be so treated that the basement could be kept perfectly free for examination and recognition of the various chambers, baths," &c.: more easily said than done, considering the point to which the new works have been carried. Eventually this was withdrawn in favour of an amendment moved by Alderman Wilkinson:—"That it be an instruction to the Baths and Pump Rooms Committee to take the best and most effective measures for the preservation and exhibition of the Roman remains consistent with the carrying out of the plans accepted by the Council." As far as we can gather, it appears that there is a disposition to effect this by raising some few feet the previously intended level of the new basement floor, so that an open basement may be preserved under for free passage about the Roman remains; which is exactly what we recommended should be done.

THE *Berliner Philologische Wochenschrift* (Nov. 20) briefly reports the progress of the excavations at Pompeii, where a street of tombs has just been laid bare. Professor Von Duhn, of Heidelberg, visited the place in company with the director of the excavations, Signor Sogliano. Two hundred feet in length of the street is now explored, seven tombs having been found, four on one side, three on the other. They stand slightly above the level of the street. They are of simple, cubical form, built of bricks covered over with stucco and sometimes faced with stone. The inscribed slabs are of marble. Several skulls have been found, in which Charon's obolus fee still adheres to the jaws. The coins thus accidentally preserved are, of course, of the greatest importance in determining the date of the tombs. It seems that the majority of them are prior to the reign of Augustus. A few marble portrait statues, of fair style, have been found outside the tomb; some of them still retain clear traces of painting. Perhaps the chief interest centres round the inscriptions painted in red on the grave and the chance scratched inscriptions of the passers by, who some two thousand years ago cut their names and their jokes on the monuments as they walked from Pompeii to Nocera. The monuments seem also to have served the purpose of advertisement columns. On one a smith of Nocera offers a reward to any one who will bring back his mare that has strayed away. The excavators have still about a quarter of a mile of tombs before them.

THE same number of the *Wochenschrift* gives an account of an interview between Herr Max Ohnefalsh-Richter, well known for his excavations in Cyprus, and with the new Governor-General of the island. The result is most hopeful. Sir Henry Bulwer is heart and soul in favour of excavations, and, moreover, desires that these should be conducted on the most strictly scientific principles. "Only with this object,—to enrich science," he says, "have we a right to disturb the dead in their graves. Archæology has not for its object to fill the purses of greedy speculators. Excavations must not be undertaken on commercial grounds." These words have not been spoken without need. Further, Sir Henry Bulwer expressed himself as strongly in favour of the several efforts of European nations. As an Englishman he was bound personally to rejoice if the British Museum went ahead in the search, but he would welcome and encourage, so far as he could, any scientific effort, whether it came from London, Berlin, Paris, or Vienna. Major Chamberlain, the private secretary, spoke strongly in favour of the establishment of *local* museums, instancing those of Olympia, Pompeii, Nimes, where every object in the museum spoke of the past culture of the actual spot where it stood. Herr Ohnefalsh-Richter concludes with an account of a less satisfactory interview with a previous Governor-General, in 1882, the details of which we forbear to quote. We can only hope that as the previous Governor did not speak German, and the conversation was in part by signs and gestures, that there was some measure of misunderstanding.

THE third volume of Hermann's "Lehrbuch der Griechischen Antiquitäten," which is devoted to the remains of Greek theatres and stage lore in general, contains a valuable appendix, consisting of some letters from Dr. Dörpfeld chiefly on the pre-Lycurgic condition of the Dionysos Theatre at Athens. We desire rather to call attention to the letters, which are of great interest, than to summarise their contents; but it may surprise the general reader to learn that in the theatre, as it stood in the fourth century B.C., the orchestra was divided from the spectators' seats by an open canal of water, over which fourteen little bridges passed. It sounds a cool and pleasant arrangement. Dr. Dörpfeld holds strongly that of the previous structure nothing now remains except portions of the circular orchestra or dancing-place built of polygonal stones. This was the kernel of the theatre, and its only early permanent feature. Spectators' seats and scenic arrangements were of wood in early days, and regarded as strictly accessory. So much does he think this was the case that he holds that the theatre could be spoken of simply as the "orchestra," and hence, when the "orchestra" simply is spoken of, as in the now famous passage of Andocides, we need not conclude that the simple "dancing-place" to the west of the Areopagos is necessarily intended. It may be the very Dionysos Theatre itself. The suggestion is of great importance for the settlement of some points of Athenian topography.

THE Institute of Architects have forwarded a memorial to the Metropolitan Board, calling attention to the proposed sale of Staple Inn, and urging upon the Board the desirability of preserving the Hall and other historic buildings in the Inn, in the course of carrying out any scheme which may hereafter be decided upon in dealing with the site. The memorial is not likely to meet with any success, as the Board has no funds available for the preservation of ancient buildings, and it is doubtful whether the site could be looked upon as an open space, under which category alone the Board would have power to acquire it.

THE principal portion of the restorations at the Church of St. Bartholomew, Smithfield, being now complete, arrangements have been made for the re-opening services on the 30th inst. The interior now admits of being inspected by those who are desirous of seeing the work done. The collection of old worked stone which has been found during the progress of the works, including the greater part of the tracery of the great east window of the fourteenth century, has been arranged in a temporary museum in the Lady-chapel. The published accounts show cash receipts amounting in all to 9,688*l.* 15s. 1d., and the expenses are:—Purchase of the fringe factory, 6,565*l.* 14s. 10d.; restoration of apse by Rev. F. P. Phillips, 1,700*l.*; of east end, 119*l.*; new roof to church, 381*l.*; excavating Lady Chapel, 54*l.* 15s. 8d.; cost of circulating appeal for subscriptions, 412*l.* 18s.; and other miscellaneous items, leaving a balance of 165*l.* There is a fund of 92*l.* 1s. in hand for special objects, and a deficiency of 75*l.* on the organ repairs. The estimated costs of other items are promised or guaranteed, but the sum of about 2,000*l.* is still required to complete the whole of the work in hand, but a fresh appeal is now being issued for 10,000*l.* to continue the necessary alterations.

IN view of the great number of fires that have occurred within the last two or three years, and the unfortunate loss of life which has in so many cases accompanied them, we are glad to hear of a practically fireproof cement, patented by a Mr. Thomlinson, of Hove, and made at the Knot Hill Plaster Works, near Carlisle. Its base is sulphate of lime, which, being a non-conductor, has an immense power of resisting heat, even when it is so intense as to fuse gold, silver, or copper. What is of almost more importance, the cement does not shrink or expand from the action of fire, and should be, therefore, a first-rate preservative for ironwork, and a guarantee against structural derangement later on. The new material is a quick dryer, and very strong, a brick 1 in. square being capable of bearing a strain of 550 lb. before breaking. Capt. Shaw thinks highly of it; and if all that is claimed for it is true, it ought to go a long way towards solving the question of how to make houses uninflammable.

THE report for 1886 of the operations of the Boiler Explosions Act is of considerable interest, and shows that the intentions of the Act (which dates from 1882) are being steadily fulfilled. It is true that the number of cases of examination and inquiry were greater than in previous years; but this cuts two ways, as showing that steam users were more alive to the value of inspection, while, on the other hand, the number of deaths fell considerably below the average of the three former years. The following brief table shows this clearly:—

Middle of	Cases.	Deaths.
1883	45	35
1884	41	18
1885	43	46
1886	57	33

More than half the accidents happened from deterioration or corrosion of the boilers, or from defective safety-valves, the number arising from neglect by attendants being only six out of the fifty-seven cases. Mr. Thomas Gray, who is responsible for the report, remarks that the word "accident" scarcely applies to the situation, for the majority of the boilers examined proved to be at such a critical con-

dition of tenuity, that the real accident was that they remained so long without exploding. Many steam users work their boilers long after they are unsafe for any pressure, while the question of fittings is too often regarded as not worth attention, they being, as a rule, "dangerously inefficient." The wonder, indeed, is that the loss of life is so moderate, considering what a wide and erratic range the fragments of an exploded boiler frequently have.

MESSRS. A. & S. GATTI, the proprietors of the Adelphi Theatre, have agreed to purchase the Hampshire Hog public-house, No. 410, Strand, and the house No. 409 adjoining, together with the Nell Gwynne Tavern in Bull Inn-court, for the purpose of enlarging the theatre. It is proposed to provide a new separate entrance to the pit on the east side of the present entrance; to enlarge the pit by setting back the back wall and adding to the pit portions of the sites of the houses Nos. 409 and 410, Strand; to provide a new staircase to the dress-circle and upper circle; to rebuild the refreshment bars, and to provide additional lavatory accommodation. The cost of the additions, &c., is estimated at 25,000*l*. The architect is Mr. Spencer Chadwick, of Parliament-street.

THE *Times* has published several letters, since the Hampton Court fire, in regard to the danger to which the pictures there are exposed from occurrences of this kind, which seem to have rather a tendency to happen at the Palace. We have long thought that the magnificent Mantegna series should be somewhere else, in a place where it can be better seen and be more safe, as this is in fact one of the most valuable productions of Renaissance art in the country. There are a few other pictures which it might be worth while to remove and place in a more secure situation; of the bulk of the collection it would signify very little to any one if it were burnt, instead of hanging on the walls to deceive ignorant and unsophisticated visitors into the belief that they are looking at great works of art. The collection, *en masse*, is one which is depressing to the spirit of the more initiated, and it requires a look out of the window at the long alleys and canals and masses of trees bathed in sunlight (Hampton Court should only be seen on a bright summer day), to restore one's intellectual tone. But certainly we have no wish to burn down the house for the sake of this particular specimen of roast. Hampton Court itself is emphatically a place to spend a happy day (in summer), if it were not for the pictures.

THE Liverpool Architectural Society has forwarded a petition to the Privy Council in favour of the granting of the new Charter to the Royal Institute of British Architects, especially in regard to the improvement in architectural education which is likely to be facilitated by the new powers asked for by the Institute. The document concludes with the statement that the petitioners "are satisfied that under the powers proposed to be conferred on the said Royal Institute due provision will be made by means of federation or otherwise" for securing a closer connexion between architects practising throughout the United Kingdom and colonies. The unanimous vote of the Architectural Association in the same direction is mentioned in another column. Of course every one knows what this means; but there is certainly something ludicrous in all this trouble being taken to rebut a factious opposition by a parcel of mostly obscure persons who have no claim whatever to represent the profession at large.

THE exhibition at Mr. Wallis's gallery can hardly be said to contain any work of great interest among the larger pictures; Delug's "Philippina Welser pleading to Ferdinand I." (42) is rather commonplace; Bouguerau's "This Sickness is not unto Death" (102) is, like all his works, a good piece of painting, but not in his best vein; and Billet's "Harvest of the Poor" (68) has, if we remember rightly, been here before; it is a fine work, however, in the school of pastoral pathos,—if one may so call it,—of which Jules Breton was the founder. Among the smaller works exhibited are some of the first excellence in their way, especially four small and highly-finished paintings placed on the settee in the middle of the room; the accepted place for works of this class in Mr. Wallis's gallery. One of these, "Hush!" (119) is by Chevilliard; an old priest dozing after lunch, with his legs piously reposed on the chair before him, while an old dame keeps watch and ward at the door; in character and in finish of detail the artist has seldom surpassed this. Two others are by Seiler, the best follower of Meissonier whom we have, "The Aquafortist" (120) and "The Recognition" (118), a very small and beautifully composed interior, where an old gentleman waves his hand from the window to a passing friend. The fourth, "A Dealer in Curios" (117), by Allan-Schmidt, is a perfect *tour-de-force* of minute realism, though with less artistic feeling and character than the other three. Spring's "Village Orchestra" (45) is another admirable work, a study of four or five figures of remarkable individuality of character. Heffner's "Castle of Ostia" (38) is an effective landscape, but this artist is becoming sadly mannered, the same receipt, with the line of light in the horizon, being repeated over and over again. Windmaier's little landscape, "Winter Drear" (101) is a poetical work, deriving its inspiration from Munthe, one or two of whose inimitable snow-pieces are also as usual among the contents of the gallery.

WE understand that Mr. Christian has completed his examination of the designs for the Liverpool Cathedral.

THE Sanitary Registration of Buildings Bill, for the compulsory examination of houses, proposed for approval by Mr. Mark H. Judge, at the meeting of the Society of Medical Officers of Health last week, is certainly a very crude measure in its present form, especially in its want of any provision for the proper definition or constitution of the competent sanitary officers who are to go into houses and report on their condition. At the same time, the dead set made by the medical authorities who took part in the discussion against architects and engineers, was just as crude and one-sided. We may point out, however, that the first thing to do in regard to sanitary inspection is to get a staff of inspectors not only competent, but unhampered in their power of action by superior and sometimes interested officials. Until this is done, it is of little use to draft Sanitation Bills.

FRENCH AND ENGLISH HARBOUR WORKS.

THE great harbour works now in course of construction at Boulogne bid fair to form a far more practical and practicable link in the means of intercourse between France and England than could have been afforded by the Channel Tunnel, had that hairbrained fancy proved commercially, as well as physically possible, and unobjectionable from a military point of view. The silver streak could long since have been bridged, in a mode far less objectionable to the most squeamish passenger than by a drive for twenty-four miles through the bowels of the earth, by the means of such a vessel as the *Great Eastern*, but for the fact that no ports existed of sufficient magnitude to accommodate such a craft. The French are in earnest as to the removal of this stigma from their own coast. By the construction of additions to the 646 yards of the present east pier, which will amount in all to a length of more than three miles of piers, mole, and breakwater, an area of 340 acres of basin will be sheltered from the waves and currents of the Channel. The new south-west pier starts from under the cliffs of Chatillon, west of the town of Boulogne, and already stretches seawards for 1,472 yards. To this straight part of the pier will be added 218 yards of curved wall, and a breakwater is to be carried for 654 yards more. At the end of this is to be a passage 272 yards wide, with a depth of from 26 ft. to 27 ft. of water at the lowest spring tides. The mole, which is to start from the end of the open passage, and which is not yet commenced, is to be 646 yards in length. A second opening is then designed, at the north-east corner of the basin, which is sheltered by the before-mentioned prolonged east pier. In the centre of this noble harbour will be an oblong pier, 430 yards long and 218 broad, intended for passenger and goods traffic; on either side of which dredging will provide a depth of 26 ft. of water for all classes of vessels to moor alongside. The railway terminus will be erected on this pier.

Of the sum of 680,000*l*. voted for this harbour, 600,000*l*. have already been expended. It is said that double the amount of the original vote will be required. The stimulus thus given to the commerce of Boulogne is already very considerable. The export and import traffic now ranks next to that of Marseilles and of Bordeaux, and is daily on the increase. 328 fishing-boats, of 80 tons burden, manned by 5,024 men and boys, and six schooners of 150 tons each, now hail from the port of Boulogne; and as much as 130 tons of fish are landed at one time. In 1885 the herring fishery alone brought into Boulogne 27,000 tons of herrings; and other fish amounted to 6,000 tons. The total value was upwards of 400,000*l*., of which the herrings alone fetched 240,000*l*. Lobsters, crabs, and the like, are not included in the above.

The activity shown by France in the promotion of both ocean and inland navigation, contrasts very forcibly with the neglect of our own Government to enforce such measures for the furtherance of commerce as rank beyond the limits of private enterprise. During the last twenty years France has expended 11,176,632*l*. on seventeen harbours; Belgium, 2,700,000*l*. on two harbours; Germany, 1,110,379*l*. on five harbours, besides an unknown but enormous cost on Danzig, Wilhelmshaven, Königsberg, and Memel. These four States, together with Spain and Italy, have spent, during the period named, 432,000*l*. a piece on forty-eight harbours, and larger sums on four or five more.

In our own country, during the five years 1876-1882, the number of ascertained shipping casualties on our coasts has averaged 3,300 per annum, out of which 497 vessels per annum were totally lost. The annual loss of life incurred has been 738. The Select Committee on Harbour Accommodation of 1883 and 1884 reported that on the east coast of Great Britain, with the exception of the natural advantages afforded by the estuary of the Thames, by the Firth of Forth, and by Cromarty Forth, there is not a single harbour which is adapted to the requirements of the Navy in time of war. Two works, one at Dover and one at Peterhead, have been determined on by the Government, to be carried out by convict labour. The Committee justly held that to delay the construction of National harbour works for the miserable economy to be secured by the use of convict labour is a great mistake, and urged that the construction of the harbours which they recommended should be carried out at the national expense, as in the similar case of fortifications.

Urgent as appeared to be our need of harbour accommodation in the opinion of the Select Committee appointed to examine the subject, a twofold weight is added to the considerations which they advance by the activity displayed at Boulogne. In the event of a war with any naval power, Brighton and the long line of towns and scattered residences that dot our coasts lie at the mercy of any enemy that can obtain even a momentary command of the Channel. It would tax the best resources of Great Britain to meet such a fleet as might easily ride at anchor in the 340 acres of the new Boulogne Harbour. And if, under stress of weather, our Channel fleet had to seek the shelter of the Thames, a French expedition might leave Boulogne, inflict incalculable mischief on the Kent and Sussex Coasts, and be back again within the shelter now providing, long before our men-of-war could arrive to guard the shore. It is hardly possible to insist too strongly on the national importance of the defensive measures which are rendered imperative by the hasty preparation, in time of peace, of a naval shelter on the Continental seaboard at the point nearest to our coasts, of which such irresistible use could be made,—if we continue supine,—in times of war. It is

not one public writer, alone, who claims attention: it is the voice of an important and authoritative Parliamentary Committee, echoed back from the active din of the French harbour builders.

OLD HOUSES OF THE SEVENTEENTH CENTURY AROUND LONDON.

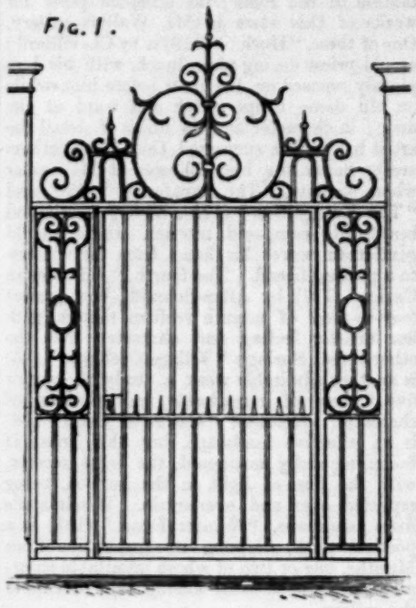
THERE exists in the environs of London a rapidly-diminishing number of houses of the middle or end of the seventeenth century, and the beginning of the succeeding one, together with a few of earlier date, which deserve to be described before they pass away. So rapid is the disappearance of these buildings, that it is not at all an unusual thing for one of them to be noticed with all its familiar surroundings, only to find the site covered with small houses and streets on the occasion of the next visit to the locality, the frequently spacious grounds around them being valuable to the speculative builder and land jobber. Within only a few recent years comparatively many well-known and important houses have thus disappeared, among which may be noted Putney House; the Manor House, Stockwell; Tradescant's House, South Lambeth; Kennington Mansion House; Kensington House; the Great House, Plaistow Broadway; Chiswick Manor House; and many others, whilst fire has also removed several. Many of these appear to have never been recorded by the pencil. It is true that, in an artistic sense, the designs of some of these old mansions, and of others that remain, were not all that could be wished, owing to their plainness of outline, and the absence of decorative features. Still, since the true origin of the so-called "Queen Anne" style is to be traced in these buildings, and their designs indicate some marked contrasts to modern practice, in which there is so much diversity of outline, it may be as well to present some examples of what these houses were like, while they yet remain to us. These examples, we trust, will be as useful to posterity as to ourselves, and we may refer to a series of examples given in the pages of the *Builder* some years ago, of the ancient timber houses which, for the most part, then existed in London. The progress of modern requirements and modern change have almost entirely obliterated the buildings then illustrated, and very few of the series now remain. Many, in fact, are recorded only by the sketches referred to.

The numbers of houses for good families erected in the environs of London, show plainly that the more wealthy citizens had at the period under review already begun to adopt the habit of living outside the City boundary, to a larger extent than many are at first likely to suppose. On no other theory can the number of houses of importance be accounted for, although it can but be supposed that the regulations forbidding the erection of buildings within and around the City, must have retarded the habit to a great extent.

These laws must ever be the occasion for our surprise as examples of arbitrary and blundering legislation; and in these days of the continuous overgrowth of the City, must excite our wonder that at any single period it could be thought possible to restrain the increase of a large city by such means. Still more so when we find them renewed reign after reign, and during the period of the Commonwealth, as well as after. There are, however, numerous evidences that a wealthy landowner could, and did, get some dispensation and relief, either by means of some court influence or otherwise. Thus, Charles I. in 1640 gave licence to Thomas York to build over St. Clement's Inn-fields, and in 1642 to Mr. Gervase Holles, to erect a specified number of houses and streets westward of what is now Clare Market. The Bill of 1657, for preventing the increase of buildings, had a clause permitting the Earl of Clare to continue their erection, notwithstanding the covenants of the Act.

There is a curious document printed by Lysons in the 3rd vol., p. 447, of his "Environs of London," ed. 1795, which exhibits the mode of operation resorted to by owners of estates desirous of realising their building value. In 1673, Philadelphia, Lady Wentworth wishing to pay the heavy debts contracted by the Earl of Cleveland in the civil wars, wisely concluded that the enhanced value as building land of some part of the Manor of Stepney would aid her project. She accordingly solicited the King's licence to build upon what was then called West Heath, being a portion of the land on the south side of the Mile End-road, with part of the west frontage to the road to Stepney. Sir Christopher Wren was employed to survey the land, and he gave his opinion that the site was eligible for building, and the position convenient for the erection of habitations for mariners and manufacturers who served the shipping; that it was much more wholesome than the neighbouring places; and that there was no objection, except the increase of buildings, contrary to the statute, which limited buildings within three miles of the city. There is a curious plan attached to the report of no little interest, as showing the changes which have come over this now densely populated part of London in 213 years. The old earthen mount, known as Whitechapel Mount, thrown up during the civil wars, one of several, at the entrances of the main roads to London, and here called the Fort; the old Stepney burial-ground, acquired during the plague of 1665; and several other points curious for observation in the present altered state of things are all set forth. The certificate signed by Wren being given in full by Lysons, there is no need to do more than thus refer to it, but it may be added, that licence was given to Lady Wentworth by order of Council, March 21st, 1672-3. Buildings were doubtless soon commenced, and, indeed, Seller's Map of London, 1680, and that printed by Mr. R. Chiswell about 1707, show them.

FIG. I.



The reference to this building scheme of Lady Wentworth's having brought us to Stepney, let us turn to a row of houses opposite

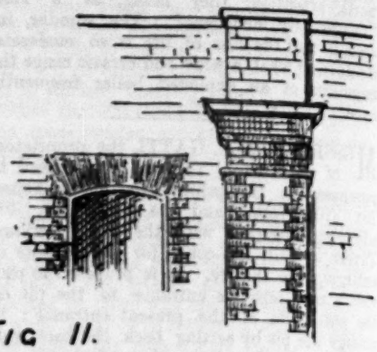
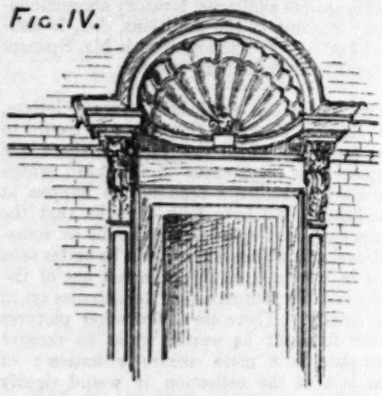


FIG II.

to the portion of land included in the scheme, on the road leading to Stepney Church. These stand on land within the Manor of Stepney,

FIG. IV.



and, doubtless, its laying out followed very shortly after the buildings referred to. This road is the now familiar Stepney-green, but old maps call it Mile End Old Town, or Stepney-green.

FIG. III.

Roque's Map, 1746, shows the east side all built upon, but only a portion of the west side. The "green" proper, a narrow strip of land, has recently been enclosed and planted by the Board of Works, and thus preserved as a recreation-ground and health-resort in a district where it is much needed.

At the north-east angle of the Green are several of the original houses. They are of the square, "upright" type of house in fashion towards the close of the seventeenth century. One or two of them have good door-cases, and a

few fragments of wrought iron of the entrance-gates and railings may be noted here and there. Whittington House has a good wrought-iron gate, of which we give a sketch (fig. 1). Proceeding southwards we come to Montgomery House, a very characteristic example of a class of plain designs then very common. The ornamentation consists only of two projecting pilasters, with cut and gauged red-brick caps, shown in sketch fig. 2. Next to this, lying more away from the road, is a noteworthy mansion, which was evidently once detached, although it is now touched by Montgomery House, which is evidently, therefore, of a little later date. This House, now numbered 37 and 39, Stepney-green, is shown by fig. 3. It is of a type of house of rather earlier date than can be assigned to this specimen, for the entwined letters G and M, in the entrance-gate, point to the reign of William and Mary as the period of its erection. It is built of good reddish-grey bricks, laid Flemish bond, with gauged arches and dressings of bright red bricks, such as were once common in almost all works of this period, of very good quality and texture. The cornice is of wood, the modillions and mouldings being laid on to a solid wood fascia. The hood to the entrance-door (fig. 4) and the pronounced outline of the dormer windows belong to the rather earlier class of design already referred to, the enrichments under the hood are most probably of plaster or composition, as were those of a very similar doorway existing until recently at the old Mansion House, Kennington. The entrance leads into a central hall, and internally, the staircase is a good piece of joinery, with curved soffits to the stairs, carved and bracketed ends, and turned balusters. The cornices to the rooms are heavy, and without enrichment. It is, however, to the elaborate and excellent wrought-iron work that our special attention must be directed. Like almost all other houses of this date, the ironwork is abundant and good. Fig. 5 shows the design of the railing of the external steps; Fig 6 that of the panels of the landing. The approach is of squares of black and white marble, laid diagonally, another usual feature. The main entrance-gate is shown by fig. 7, and a portion of the railing to the left and right by fig. 8. This ironwork is well executed, but it is in great need of repair. The house is now used as a Jewish Home. The illustrations are sketches merely, and are not measured or drawn to scale.

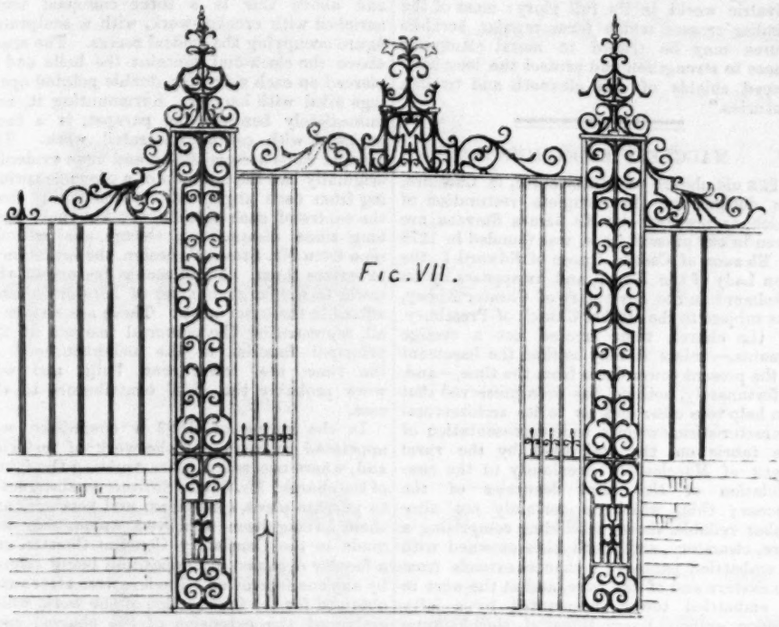


FIG. VII.

Stepney-green has been almost entirely cleared of the other old houses which were once numerous along its extent,—the Green having been a favourite resort. A few old houses still exist to the north-west of the parish church, and Stepney-square is composed of a quaint group of plain buildings of late seventeenth-century date. Beyond a few fanlights to the entrance-doors there is nothing special in their design.

FIG. VIII.

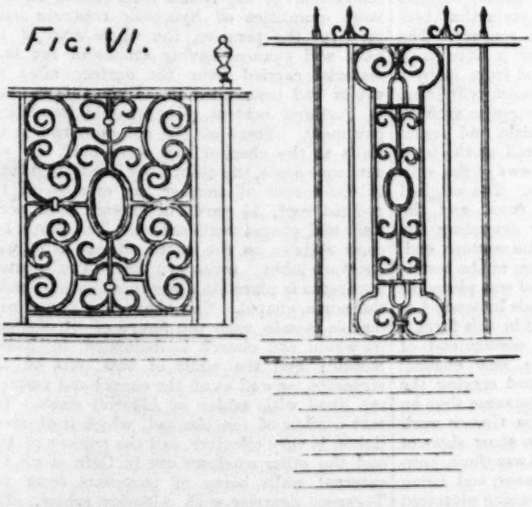


FIG. VI.

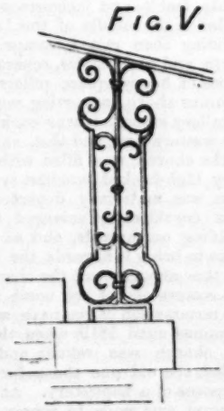


FIG. V.

Acton Local Board. — At the ordinary meeting of the local board for the district of Acton, held at their offices on the 16th instant, it was resolved by the unanimous vote of the Board to increase the salary of Mr. C. Nicholson Lailey, their engineer, from 250*l.* to 500*l.* per annum, Mr. Lailey undertaking to devote the whole of his services to the work of the Board.

THE CROSS IN HERALDRY.

IN the last decade of the eleventh century the Council of Clermont was held under Pope Urban the Second, when, amidst cries of "God wills it," a crowd of enthusiasts pledged themselves to drive the Saracens from the Holy Land, and while taking the oath received from his Holiness the sacred badge of Christianity, and became "bearers of the cross." Such was the inauguration of the Crusades, the outcome of the burning eloquence of Peter the Hermit, or Little Peter, as he was more generally known.

To distinguish the various nations engaged in this great enterprise the crosses borne were differenced in colour, and Cussans tells us that the English assumed a white one, and wore the badge sewn or embroidered on the right shoulder of the surcoat, and that the French chose red and the Flemings green, while the Crusaders from the Papal States were known by two cross keys.

According to Sir George Mackenzie, the Scots at the first Crusade wore the cross of Saint Andrew, the French a white cross, the English one of gold, the Germans a black cross, and the Italians a blue one.

In the third Crusade Columbiere says the French appropriated the red cross which had hitherto been borne by the Spaniards. The question is one of interest, but the element of uncertainty enters into it. Some writers hold that the French added the fleur-de-lis to each end of their badge, and thus arose the cross flory, while the Papal warriors affixed a transverse piece to every limb, and formed the cross-crosslet, which may be described as four small crosses springing from one centre.

The Knights Templars subsequently assumed the blood-red cross of martyrdom, and bore it with eight points; and the Hospitallers took the same form in black and at times in white.

The Crusading Kings of Jerusalem adopted the cross potent surrounded by four crosslets, all in gold, on a silver shield, in defiance of the well-known rule in heraldry (that metal shall not be placed upon metal), but in reference to the wings of the dove, covered with silver and feathers of gold, spoken of in the thirteenth verse of the sixty-eighth Psalm. The five crosses are said to symbolise the wounds of Our Saviour.

Godfrey de Bouillon was said to assume this coat of arms from another cause, and that was to court inquiry of all who might behold the unauthorised combination of metals, and lead them to ask if it were not a false one. "Perhaps," says Ellen J. Millington, "also from the same pious motive which induced him to refuse the crown of Jerusalem, desiring that even the necessary ensigns of human honour should be made to him tokens of humiliation."

The crosses of heraldry are numbered by *hundreds*, and many of them are very beautiful in form, and it is something marvellous to think of the ingenuity of the science (or art) that could produce so many shapes and varieties to this "brilliant addition to the splendour of the shield," as Moule describes it. Berry's "Encyclopædia Heraldica" enumerates three hundred and eighty-five different crosses. Well might old Gerard Leigh say he was "weary of them."

Our national cross of St. George is, perhaps, the earliest example of the emblem of Christianity that is to be met with in heraldry, and perhaps the best known and most frequently met with. This is the one borne by the knight in Spenser's "Fairy Queen," "the deare remembrance of his dying Lord," the blood-red cross of martyrdom.

We can only name a very few of the crosses borne in armoury, but they are amongst the leading ones:—

Cross anchored, so named from the anchor-like termination of the limbs.

Cross of St. Andrew, on which this saint is supposed to have suffered martyrdom; it is in the form of an X.

Cross annulletty, or with rings at the ends.

Cross avellane, so called from its resemblance to four filberts (*nux avellanæ*).

Cross bottonnée, or budded at the ends.

Cross Calvary, elevated on three steps, said to be symbolical of Faith, Hope, and Charity.

Cross fourchée, or forked at the ends.

Cross Maltese, ending in eight points, to typify the eight beatitudes.

Cross moline, or millrind, from its resemblance in the terminations to the iron attached to the millstone.

Cross pattée or formée, spreading out at the extremities.

Cross patriarchal, with two horizontal arms, sometimes called a double cross.

Cross of St. Patrick, the same in form as that of St. Andrew.

Cross pommée, ending in balls or apples.

Cross tau, that of St. Anthony; it is T-shaped, and always appears on the left-hand side of the garment in representations of this saint.

Cross urdée, terminates in points, or with wedge-shaped ends.

Cross wreathed, formed of the twisted garlands, by which the crest is joined to the helmet, probably derived from the wreathed turban worn by Saracens. The family of Seresby bears this cross in red and blue.

Here our list terminates (lest our readers be wearied), but we have only touched on the fringe of the matter.

Some of our oldest families bear plain crosses alone. We instance a few from Parker's "Glossary of English Heraldry":—Argent, a cross sable, Raynsford; argent, a cross vert, Hussey, Lincolnshire; azure, a cross argent, Aylesbury, Warwickshire; azure, a cross or, Shetton, Norfolk; or, a cross gules, Corsby, Scotland.

These are simple bearings, and, therefore, the more dignified, the very simplicity of these "old coats" shows their early adoption before so many varieties had to be devised for the many families desiring to see the cross in some shape or form on their shields.

The Sneyd Kynnersleys of Loxley, Staffordshire, have a cross potent in their arms, derived from a crusading ancestor who followed King Edward I. to the Holy Land, and received there the honour of knighthood from that monarch.

In the Middle Ages, merchants' marks began to be used. They were generally composed of a monogram or initials, and the cross was frequently added. Some of these devices are to be found in our churches. At Hitchin, in Hertfordshire, some interesting examples are to been seen. In those days traders were not allowed to bear coats of arms or shields, and these merchants' marks were adopted by successful adventurers in commerce.

Many of the mottoes accompanying crosses have direct reference to them, breathing a spirit of devotion and hope. We give one or two selections: "Cruce dum spiro spero," "Virtus sub cruce crescit," "Fidei coticula crux," "In hoc signo spes mea," being fair examples of them.

We must not forget that for one of these heraldic figures we go to the heavens themselves and use that beautiful constellation known as the Southern Cross for the arms of some of our Australasian bishoprics.

The early Christians loved to trace the resemblance of the cross in natural objects, and Rhabanus Maurus (a ninth-century writer) beheld with fond imagination this ever-welcome form in his surroundings. He says "Birds aspiring to reach the heaven, spread their wings in the form of a cross. The ship that floats upon the wave displays in its mast and spreading sails the figure of a cross; and man, when he stands erect to pray, or when in swimming he parts with his body the yielding wave, extends his arms in the likeness of a cross."

What would this enthusiast have said had he known that the stars themselves lent their shining orbs to form the adored figure?

Tertullian also bears remarkable testimony to the all-pervading influence of the cross amongst its early disciples. He tells us that "at every commencement of business, whenever we give in or come out of any place, when we dress for a journey, when we go into a bath, when we go to meat, when lights are brought in, when we lie down or sit down, and whatever business we have we make on our foreheads the sign of the cross."

In our own day we have a lady writer eloquently discoursing on the same theme, and observing that, "On the earthly battlefield, and in the hidden but no less deadly strife waged in the deep recesses of the human heart, the cross has been alike the symbol of victory and the object of adoring love," and she further describes it as the badge for nearly every order of knighthood and the reward of heroism. Can we wonder that such a symbol should be sought after?

Planché, in his "Pursuivant of Arms; or, Heraldry founded on Fact," has something to say about the cross, and, as usual, it is very much to the purpose and extremely practical:—

"Admitting," he begins, "that nothing was more common in the early days of Christianity than to paint crosses of different forms upon the shield or embroider them on the standard, and that numerous instances may be produced from illuminated manuscripts previous to the Conquest, the Bayeux tapestry and other authorities, of such a practice being continued to the period when heraldry burst upon the chivalric world in its full glory; most of the peculiar crosses which form regular heraldic figures may be traced to metal clamps or braces to strengthen and protect the long kite-shaped shields of the eleventh and twelfth centuries."

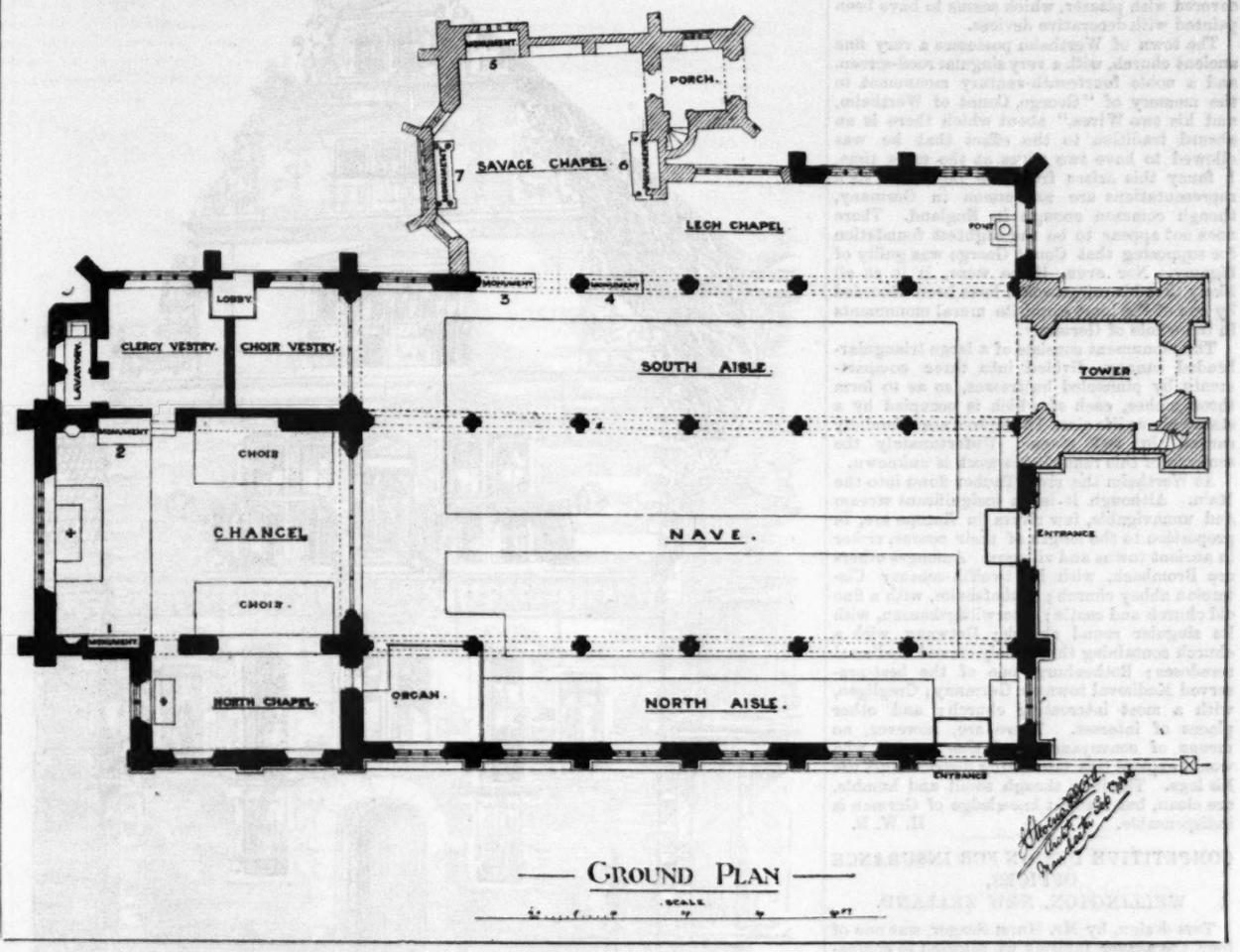
MACCLESFIELD CHURCH.

The old church of Macclesfield, in Cheshire, the designs for the complete restoration of which, as prepared by Mr. James Stevens, are given in our present issue, was founded in 1278 by Eleanor of Castile, Queen of Edward I., the then Lady of the Manor, and, as appears by an enrolment on the chartulary of Chester Abbey, was subject to the Mother Church of Prestbury. Of the church then erected not a vestige remains,—unless it may be that the basement of the present tower dates from the time,—and, unfortunately, nothing has been preserved that can help to a clear idea as to its architectural characteristics, except a rude representation of the fabric on the seal used by the rural deans of Macclesfield previously to the consolidation of the rural deaneries of the diocese; this, which is certainly not altogether reliable, shows a building comprising a nave, clearstory, and south aisle crowned with an embattled parapet; a chancel extends from the eastern end of the nave, and at the west in an embattled tower surmounted by a lofty octagon spire. Every trace of this building disappeared generations ago, and the only portions of the present structure that have any claims to consideration on the score of antiquity are the tower, which is of the Perpendicular period and somewhat ornate in character, and two chantry chapels on the south side, one belonging to the Leghs of Lyme and the other founded by Thomas Savage, Archbishop of York, who died in 1507, and whose heart is buried within its walls. These chapels, though much injured by time and neglect, exhibit many interesting architectural details.

The old church,—whether Queen Eleanor's or one that succeeded, it is not clear,—was pulled down in 1739, when another of larger dimensions was erected in its stead, in that crude, feeble, and incongruous style that prevailed in the middle of the last century. The building then raised comprised a nave with north and south aisles, separated from it by a series of heavy square pillars, with cylindrical columns above, supporting semicircular arches; a gallery extended over each aisle and round the western end, and this, as well as the body of the church, was filled with pews of the ordinary high-backed box-like type. The original plan was materially departed from, and the area considerably enlarged by extending the building northwards, and at the western end, so as to bring it towards the face of the tower. In this arrangement the chancel was placed at the eastern end of the north aisle instead of at the termination of the nave, and in this form it remained until 1819, when the eastern end of the church was rebuilt and a new chancel added, the old one thenceforward serving the purposes of a baptistery. At the same time an attempt was made to repair the timber work of the roof, which had begun to show signs of weakness and decay. The work was done, however, in a very perfunctory manner, and being hidden from view by the intervening plastered ceiling, the actual condition remained undiscovered until the recent removal of the eastern gable for the erection of the new chancel, when opportunity was afforded for a careful examination, and it was then found that the roof timbers were in such a decayed and dangerous state that it became absolutely necessary for the safety of the worshippers to remove the side and west galleries and to tie the piers with iron rods, &c. As previously stated, the tower was originally surmounted by a lofty spire, but this, being found in a dangerous condition, was taken down in 1740, when the body of the church was in course of re-erection, though the stone-work from which it sprang may still be seen projecting from the masonry of the inner walls above the bells. The tower itself is Late Perpendicular work, well proportioned, with much that is interesting in the details. It is pierced on the west face with a pointed doorway, the sides, spandrels, and space above the arch being profusely ornamented with niches, panels, quatrefoils, and other sculptured work. The second story is lighted by a large three-light window with pointed and traceried head, surmounted by a label mould, and above this is a three-canopied niche enriched with crocket-work, with a sculptured figure occupying the central recess. The space above the clock-dial contains the bells and is pierced on each side with double pointed openings filled with louvres. Surmounting it, and immediately beneath the parapet, is a band enriched with carved quatrefoil work. The parapet walls are embattled and have evidently originally had the addition of a pinnacle springing from each angle, and intermediately from the centre of each battlement; but these have long since disappeared, though, as will be seen from Mr. Stevens's design, the intention is to restore them. A noticeable feature of this tower is the large number of heraldic shields affixed to the outer walls. There are sixteen in all, representing the armorial insignia of the principal families in the neighbourhood at the time the tower was built, and who were probably the chief contributors to the cost.

In the spring of 1882 a committee was appointed to carry out the work of restoring and, where necessary, reconstructing the fabric of the church. Mr. James Stevens was instructed to prepare plans, elevations, and sections, and these having been approved, application was made to the Consistory Court at Chester, and a faculty obtained, no opposition being offered by any one interested. Tenders were afterwards obtained for the first section of the work, which embraced the extension of the chancel eastward, as also of the north aisle, which now terminates in a small chapel, and the addition of clergy and choir vestries on the south side. The contract was undertaken by the late Mr. H. S. Aspinwall, and the work carried out in a thoroughly substantial and satisfactory manner. During the progress, however, difficulties of an unexpected kind arose, and had to be provided for. It was found that the graves and vaults in the nave and chancel, as well as in the baptistery adjoining, had been carried down so much below the foundation of the piers and walls that the greatest care had to be exercised to prevent the whole fabric collapsing. Means were taken to prevent the foundations of dry rubble from sliding further, large quantities of hydraulic concrete being used for the purpose, the whole area of the nave and chancel having arches of the same material carried over the surface after the vaults had been filled in. Upon this was laid, in Portland cement, Wharebam's wood-block pavement. Some of the old openings in the walls at the chancel end were built up and new ones made, the main body being lengthened to the extent of another bay or span of the groined roof, 4½ yards in extent, with north aisle and chapel termination. The clergy and choir vestries on the south side are fitted with entrance-lobby, lavatory, &c. The heating apparatus is placed in a fireproof-chamber under the north chapel. The chancel is paved with marble mosaic, with the figure of St. Michael, to whom the church is dedicated, in Italian mosaic; and the walls of this part of the structure, as well as of the chapel and vestries, are lined with ashlar in Alderley stone. The east window of the chancel, which is of seven lights, is very effective, and the tracery of this and the other windows are in Cefn stone, the external walls being of parpoints from the Tegsnose quarries with Alderley ashlar. The whole of the roofs and doors are in the best oak and of substantial workmanship, and it should be added that the carvings, both internal and external, in the chancel and north aisle, are the work of Mr. Loveless, representing Mr. Harry Hems of Exeter. Excepting the concreting of the floor and the laying of the wood-block pavement, the larger section of the work projected has yet to be done. This will necessitate the removal of the heavy cumbersome piers which disfigure the interior, and of the double tier of Palladian windows, and, in fact, the entire reconstruction of the north side. A reference to Mr.

THE CHURCH OF S MICHAEL — MACCLESFIELD



GROUND PLAN

Stevens's drawings will show that this side will be divided into six bays, and the aisle will be lighted by five three-light pointed windows, with richly-traceried heads of Perpendicular character, the sixth bay from the east being occupied by the entrance doorway. The clearstory is lighted on each side by six windows of three lights each, with pointed traceried heads, harmonising in design with those in the north aisle. These windows are of comparatively large proportions, the object being to give as much additional light as is possible in the body of the church, necessitated by the fact that the structure, on three sides, is closely hemmed in by other buildings, which tend to darken the ground-floor windows. The western termination of the north aisle has a pointed window of three lights, similar in design to those on the north side, and one of five-lights is placed over the western entrance to the nave. On the south side, the Savage and Legh Chapels already referred to, and which possess many interesting architectural features, have through the liberality of the owners, the late Marquis of Cholmondeley and Mr. W. J. Legh, of Lyme, been given up for the use of the parishioners, and will be absorbed in the church; they will be put in a state of thorough repair, care being taken, however, that only such alterations in the details are made as may be necessary to adapt them for the purposes of public worship.

This important work is unfortunately at present stayed for lack of funds. It is much to be regretted that in a town like Macclesfield, which is associated with many stirring events in English history, and even now is accounted the chief seat of manufacturing industry in the county, there should be any hesitation or delay in responding to the appeal for the necessary means to place the church in such a condition as will render it more comely and decent, and better fitted for the purposes for which it was originally intended.

Illustrations.

CASTLE OF LÖWENSTEIN, WERTHEIM.

THE picturesque and romantically situated town of Wertheim-on-the-Main owes not a little of its interest and beauty to the noble old Castle of Löwenstein, which looks down upon it from its lofty rock.

A more charming picture is not to be found in Germany than that presented by the quaint old town with its lofty watch-tower, covered bridge, and red stone church tower, backed up by the great rock, crowned with the ruins of Löwenstein.

The foundation of the Castle of Löwenstein dates back to the tenth century, but no portion of the existing building is earlier than the fourteenth century, of which date are the keep and ruins of the chapel. The outer walls and towers shown in our illustration are works of the sixteenth century. The great tower with the bell suspended from a projecting dormer, is called the "Record Tower," and a curious legend is related concerning it. It is said that one of the counts of Löwenstein in the eighteenth century had determined to pull down the ruins of the castle, which had been partially destroyed and rendered uninhabitable by the Swedes under Gustavus Adolphus in the thirty years' war, but that strange noises resembling the groans of some one in pain were heard to proceed from the tower. Upon entering the principal chamber of the tower a parchment document was found fixed to the wall condemning to death any one who should destroy the castle. Whether this was a trick, or whether the more rational explanation to which we are about to allude, is the truth, the castle has fortunately escaped destruction, and the old record tower is still retained in a habitable condition. The probable explanation of the singular circumstances connected with the old tower is this. Löwenstein, like several other castles in Germany, conveys a title with its possession, and it is by no means improbable that the Count of Löwenstein, who contemplated its destruction, was ignorant of this fact until he discovered some ancient title-deed or document preserved in this tower which enlightened him upon the subject in time to prevent his perpetrating an act of vandalism, and probably vitiating his own title. A very remarkable feature at the Castle of Löwenstein is the structure called the "altana": it consists of a kind of balcony supported upon a lofty arcade of semicircular arches projecting from the outer balium of the castle to the edge of the fosse. On one side it is protected by a wall pierced with loopholes, and on the other it shows a delicate tracery parapet. Although the whole work is of the same date, it is singular that, while the arches and square tower at the end are quite Italian in character, the parapet is purely Gothic. What was the object of this curious building is not quite clear, but in all probability it served several distinct purposes. Possibly the solid tower or pier at the end may have borne a crane for drawing up provisions, &c., from the fosse. The loopholed side was evidently for defence, and protected the castle from an attack made upon it from the level ground on that side. The ornamental balcony offers beautiful views of the surrounding country. The great pier or solid tower is capped by a large projecting cornice, which bears a stone platform. Now, whether this platform was originally protected by an open parapet like the rest of the "Altana," or whether it supported a look-out turret, it is difficult to say. The word "Altan" or "Altana" really means a balcony or platform, but it is singular to find such a structure connected with a Mediæval castle, and it would be interesting to know whether other examples of it exist which might throw some light upon the particular use or uses of the one in question. Possibly some reader of the *Builder* may be able to throw a light upon the subject.

The castle of Löwenstein, Wertheim, is constructed, for the most part, of rubble of a reddish colour. The quoins, windows, &c., are of a very fine ashlar, of a beautiful rose tint. The castle appears to have been entirely covered with plaster, which seems to have been painted with decorative devices.

The town of Wertheim possesses a very fine ancient church, with a very singular rood-screen, and a noble fourteenth-century monument to the memory of "George, Count of Wertheim, and his two Wives," about which there is an absurd tradition to the effect that he was allowed to have two wives at the same time. I fancy this arises from the fact that such representations are uncommon in Germany, though common enough in England. There does not appear to be the slightest foundation for supposing that Count George was guilty of bigamy. Nor even, if he were, is it at all likely that his crime would have been recorded by one of the most exquisite mural monuments in the whole of Germany.

The monument consists of a large triangular-headed canopy, divided into three compartments by pinnacled buttresses, so as to form three niches, each of which is occupied by a statue above life size. The figures are splendidly carved in red stone. Unfortunately the sculptor of this remarkable work is unknown.

At Wertheim the river Tauber flows into the Main. Although it is an insignificant stream and unnavigable, few rivers in Europe are, in proportion to the length of their course, richer in ancient towns and villages. Amongst others are Brombach, with its twelfth-century Cistercian abbey church; Bishofsheim, with a fine old church and castle; Oberwiltigshausen, with its singular round church; Detwang, with a church containing three finely-carved Mediæval reredoses; Rothenburg, one of the best-preserved Mediæval towns in Germany; Cregligen, with a most interesting church; and other places of interest. There are, however, no means of conveyance, and the tourist who would explore this interesting district must use his legs. The inns, though small and humble, are clean, but a slight knowledge of German is indispensable. H. W. B.

COMPETITIVE DESIGN FOR INSURANCE OFFICES, WELLINGTON, NEW ZEALAND.

This design, by Mr. Hurst Seager, was one of four, the author informs us, selected in competition by professional assessors, though not the one ultimately carried out. We give it as an example of the tendencies of architecture in New Zealand, which we presume it may be taken to represent to some extent. The author states that his object was to produce a building which combined convenience of plan with a certain dignity and richness of effect, without any costly amount of decoration.

PONT-STREET, CADOGAN-SQUARE.

The mansions which we illustrate to-day are in course of erection on the south side of Pont-street, on part of what was "Prince's Ground."

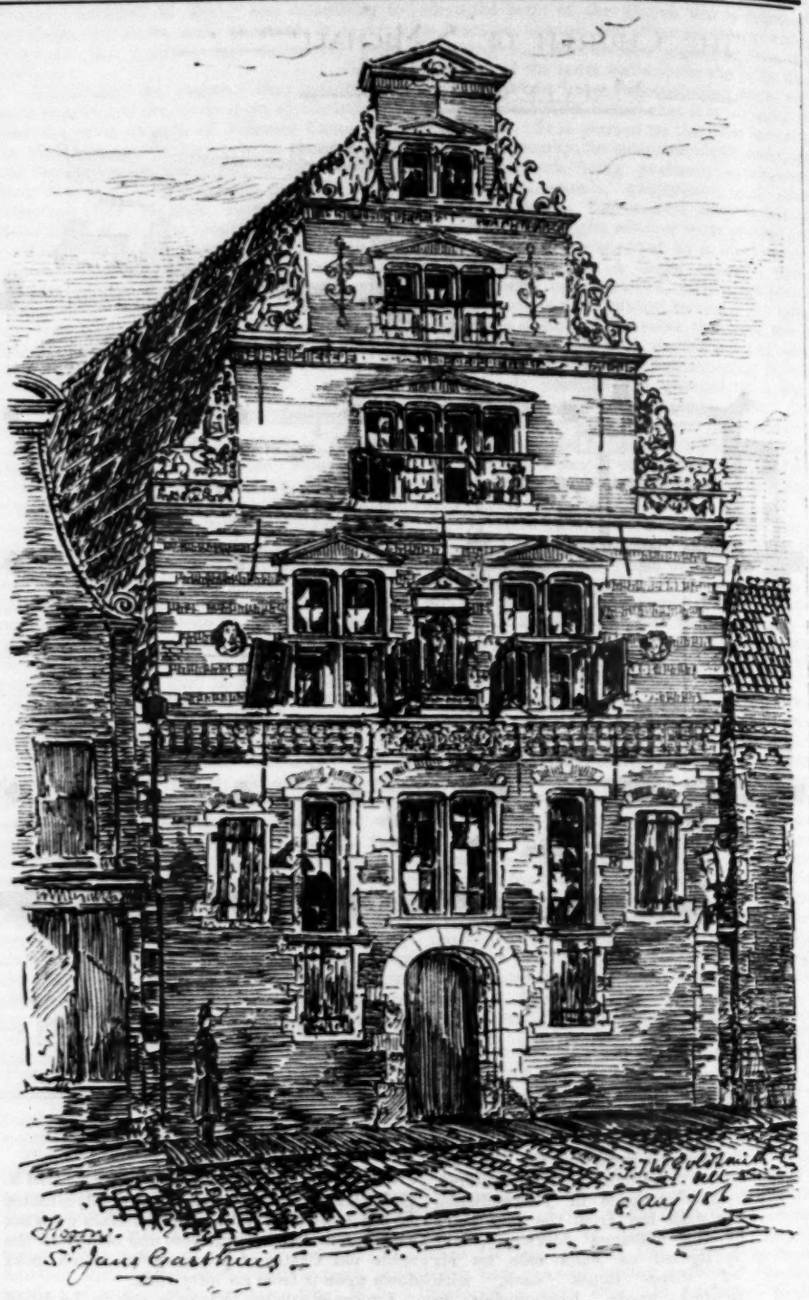
The general arrangement of plan is a front and rear block with centre area. On the entrance-floor are morning and dining rooms, and lounge, with a wide staircase-hall.

On the first floor are drawing-room and boudoir, 32 ft. by 20 ft. and 20 ft. by 18 ft. respectively. The upper floors contain the bed and dressing rooms, and the basement a suite of four servants' rooms, with offices. There are two staircases, five water-closets, and two bath-rooms. The facings are of hard bright red bricks, the dressings and bays of white stone. The style is North German Renaissance.

The contractors are Messrs. Foster & Dicksee, of Rugby, and the works are being carried out from the designs, and under the superintendence of Mr. Edwin T. Hall.

WOMEN'S FAWCETT MEMORIAL.

The memorial to the late Henry Fawcett, M.P., is placed in the Embankment Gardens, not far from Cleopatra's Needle. It is constructed of Aberdeen granite, the central feature and the stages above the niches being of bronze. The portrait bust, a cast of which was exhibited in this year's Royal Academy, is by Miss Grant, of Chelsea. The modelling was done by Mr. George Frampton, the casting by Mr. Thos. Elsby, and the granite by Messrs. MacDonald, of Aberdeen. The general design of the whole is by Mr. Basil Champneys.



St. Jans Gasthuis, Hoorn.

THE "KING'S ARMS," 254, EDGWARE-ROAD.

The elevation of this building has been carried out in red facing bricks, with Portland stone bays and dressings. Grey granite from the Carnsew Quarry, Penryn, has been used for the ground-floor. The painted glass supplied by Messrs. Gibbs & Howard; the enamelled iron ceiling and tile work by Messrs. Simpson & Sons; and the general works and fittings by Mr. F. Mark, builder, from the designs and under the superintendence of Messrs. C. Eales & Son, architects, Welbeck-street, W.

Our illustration is from the original drawing which was this year exhibited in the Royal Academy.

ST. JANS GASTHUIS, HOORN, N. HOLLAND.

Hoorn, the most famous of the Dead Cities of the Zuider Zee, contains many interesting and picturesque buildings, mostly dating from the end of the sixteenth or commencement of the seventeenth century.

St. Jans Gasthuis, dated 1563, is a good specimen of the brick and stone work of the period.

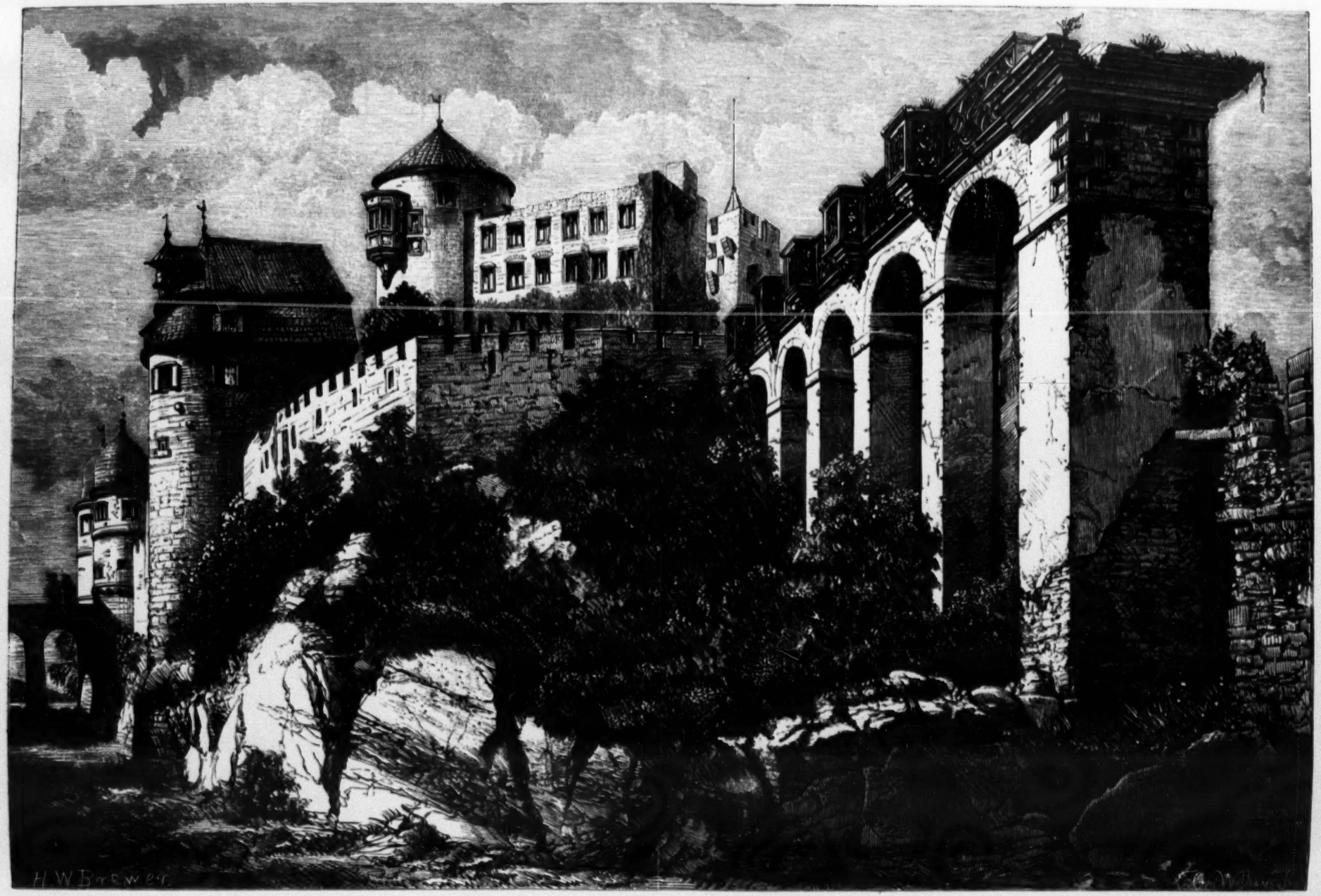
The entrance door is wide, and the jambs (which are parallel) are splayed at an angle of about 55° with the front wall. The same treatment is followed out in the window reveals throughout, a very common thing in North Holland.

The windows in this front have stone jambs, mullions, and heads, and all the strings, bands, and quoins are stone. The window jambs, &c., have a fillet and circular chamfer worked on the angles, except the lower part, which are only rebated for the shutters, and the glass is set well behind these.

Under the second-floor windows is a frieze of brickwork, with stone strings, about three courses deep top and bottom, and in the centre of this frieze is a carved stone panel, with the date "ANNO 1563." Above this is a pedestal and niche, with a statue, probably representing St. John, and in old German lettering on the pedestal, "Dit is cint Jans Gasthuis." The wall-space in this story is divided into alternate bands of plain and ornamental brickwork, as shown in the sketch. A pattern like this is used in the bands under the windows of the fifth and sixth stories. The bricks are red, and average 8¼ in. long, and four courses rise about 7¾ in.

The carvings at the side gable, and all the other stonework are painted a light cream colour.

Apparently the ridge makes the same angle with the main wall as the jambs do.

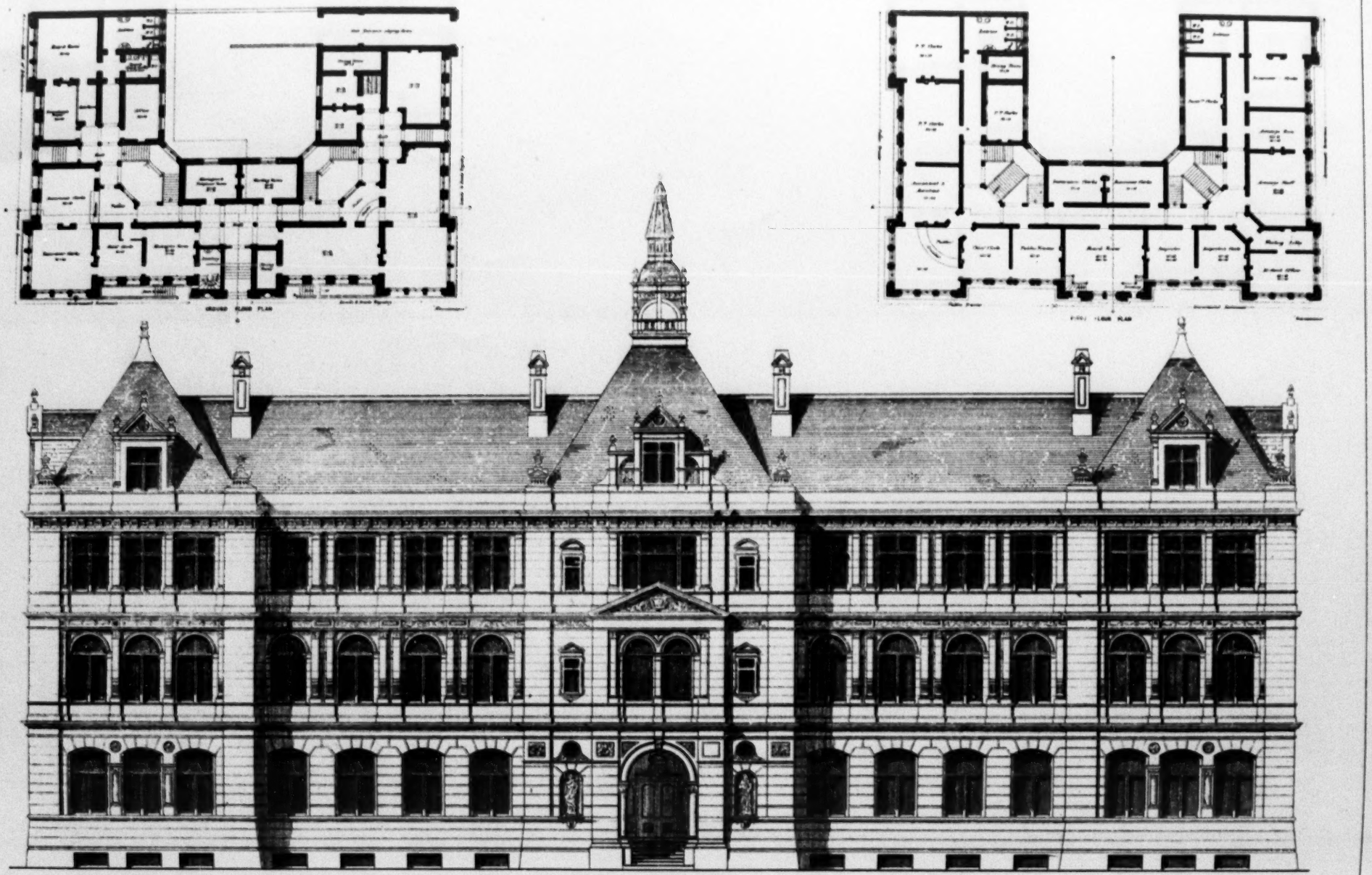


THE CASTLE OF LOWENSTEIN, WERTHEIM.

THE CASTLE OF LOWENSTEIN, WERTHEIM.

C.F. Kell Photo-Lith & Printer 6 Furnival St Holborn, London E.C.

HOUSES IN PONT STREET, CADOGAN SQUARE.—Mr. Edwin T. Hall, F.R.I.B.A., Architect.



FRONT ELEVATION

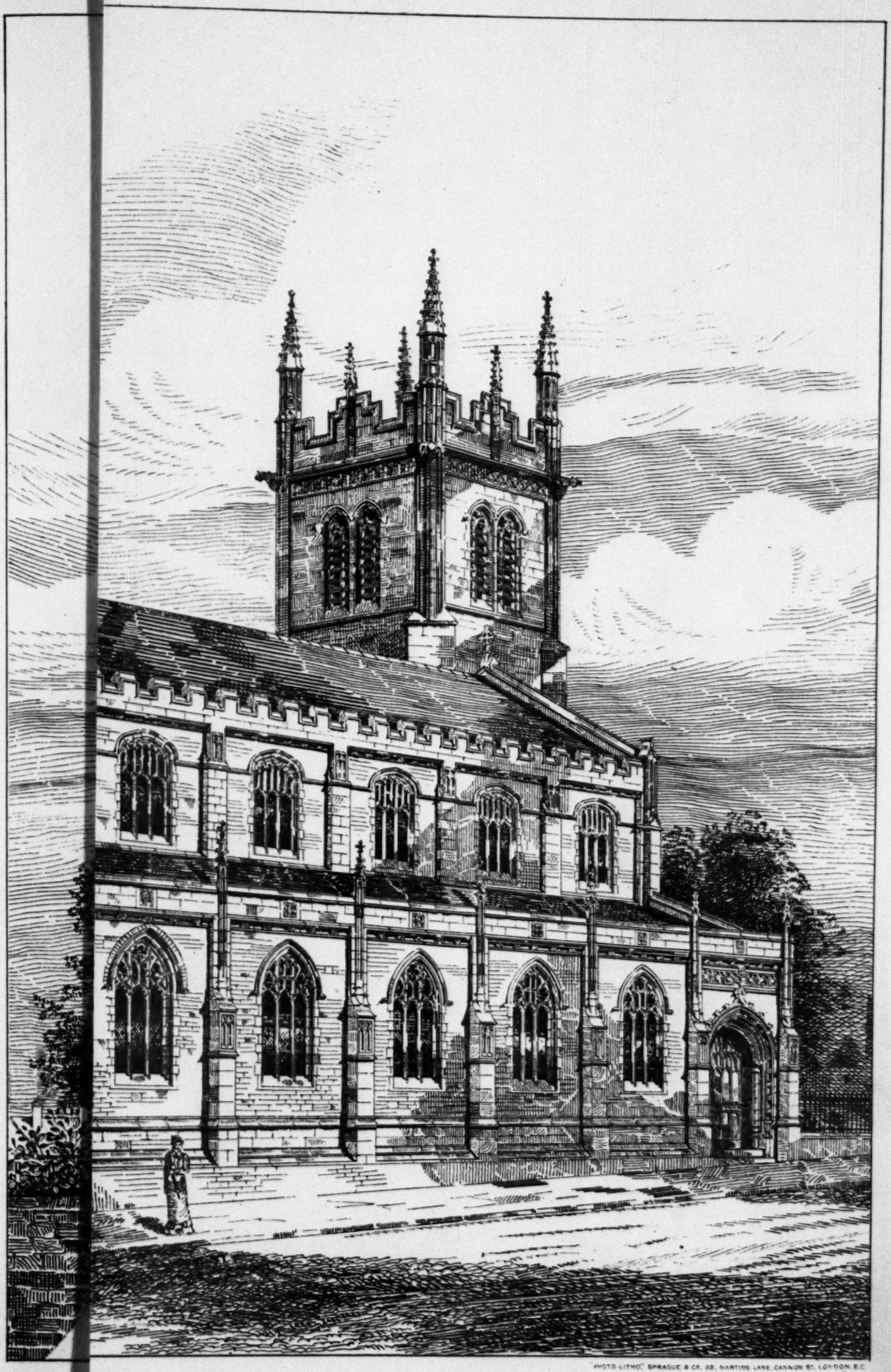
PHOTO-LITHO. SPRAGUE & Co., 28, MARTINS LANE, CANNON ST. LONDON, E.C.

COMPETITIVE DESIGN FOR THE GOVERNMENT LIFE INSURANCE OFFICES, WELLINGTON, NEW ZEALAND.

MR. J. HURST SEAGER, A.R.I.B.A., ARCHITECT.

COMPETITIVE DESIGN FOR THE GOVERNMENT LIFE INSURANCE OFFICES, WELLINGTON, NEW ZEALAND.

Mr. J. Horst Seager, A.R.I.B.A., Architect.



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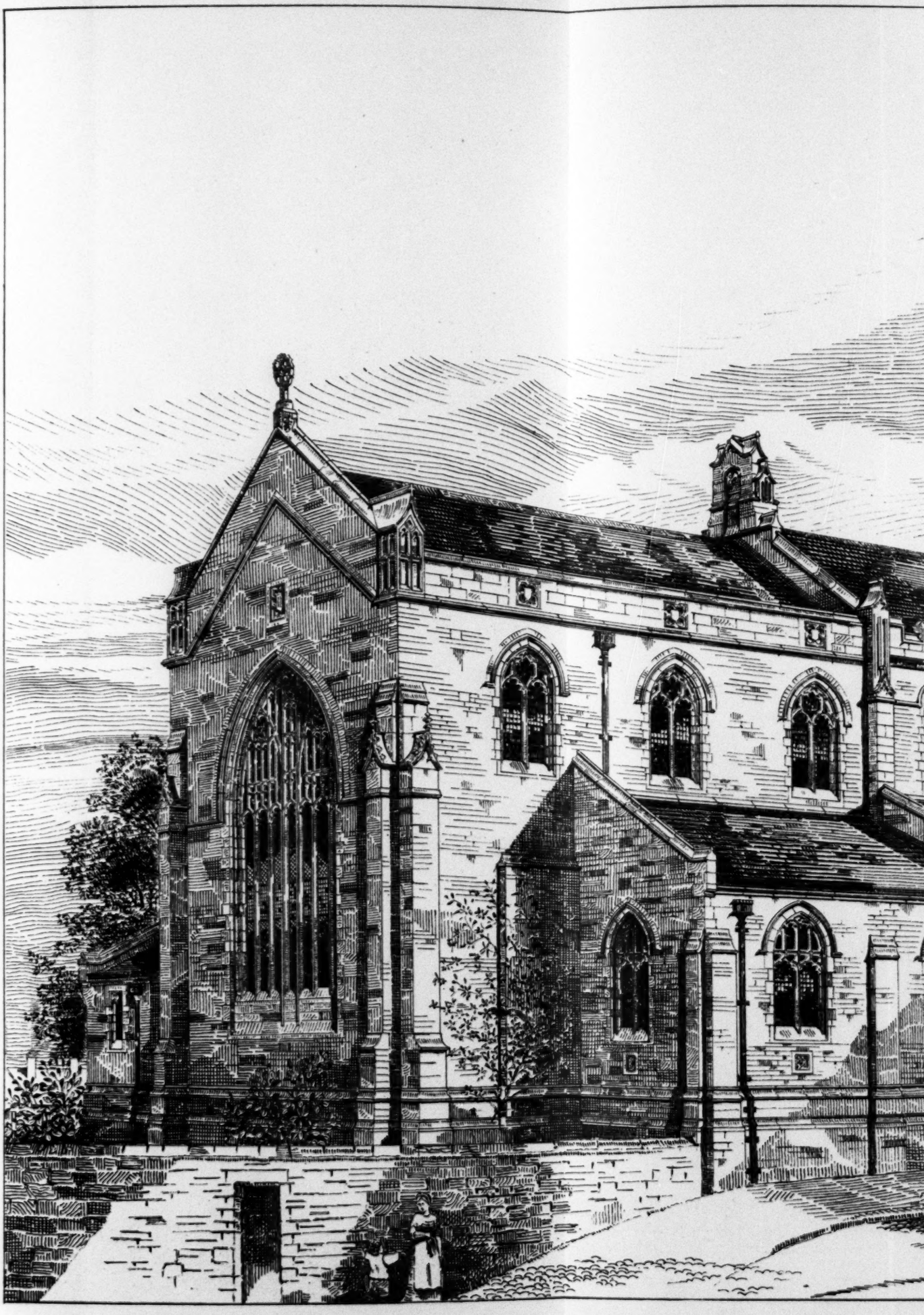
...ns, F.R.I.B.A., Architect.



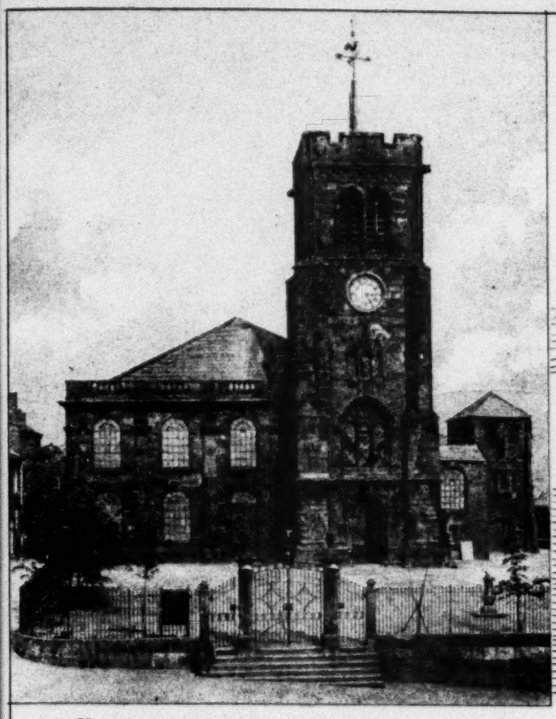
COMPETITIVE DESIGN FOR THE GOVERNMENT LIFE INSURANCE OFFICES, WELLINGTON, NEW ZEALAND.

Mr. J. Hurst Seager, A.R.I.B.A., Architect.

PARISH CHURCH OF ST. MICHAEL, MACCLESFIE

PHOTO-LITHO. SPRAGUE & Co. 22, MARTINS LANE, CANNON ST. LONDON, E.C.

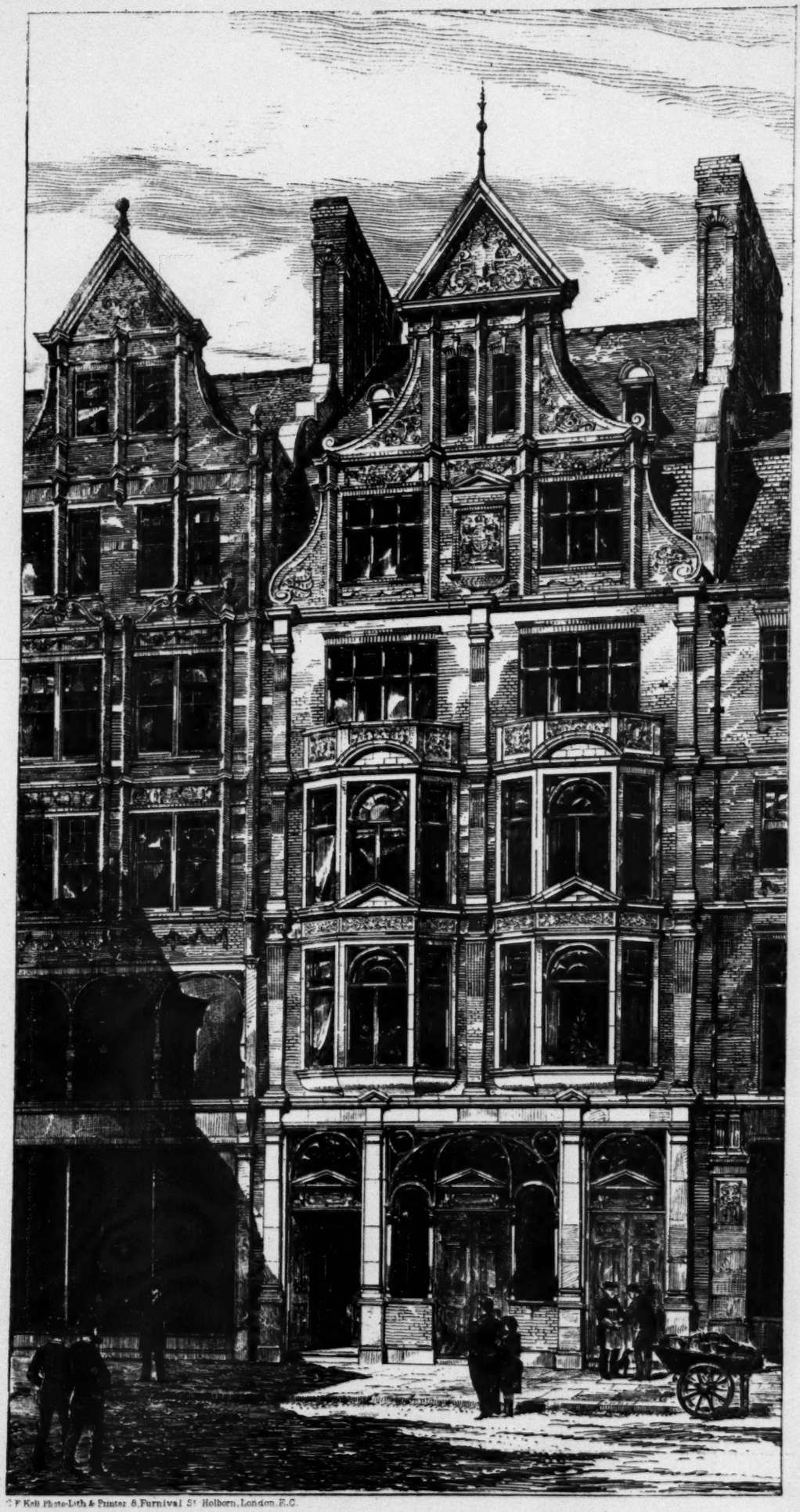
LESFIELD.—Mr. J. Stevens, F.R.I.B.A., Architect.



VIEW OF THE CHURCH BEFORE RESTORATION.

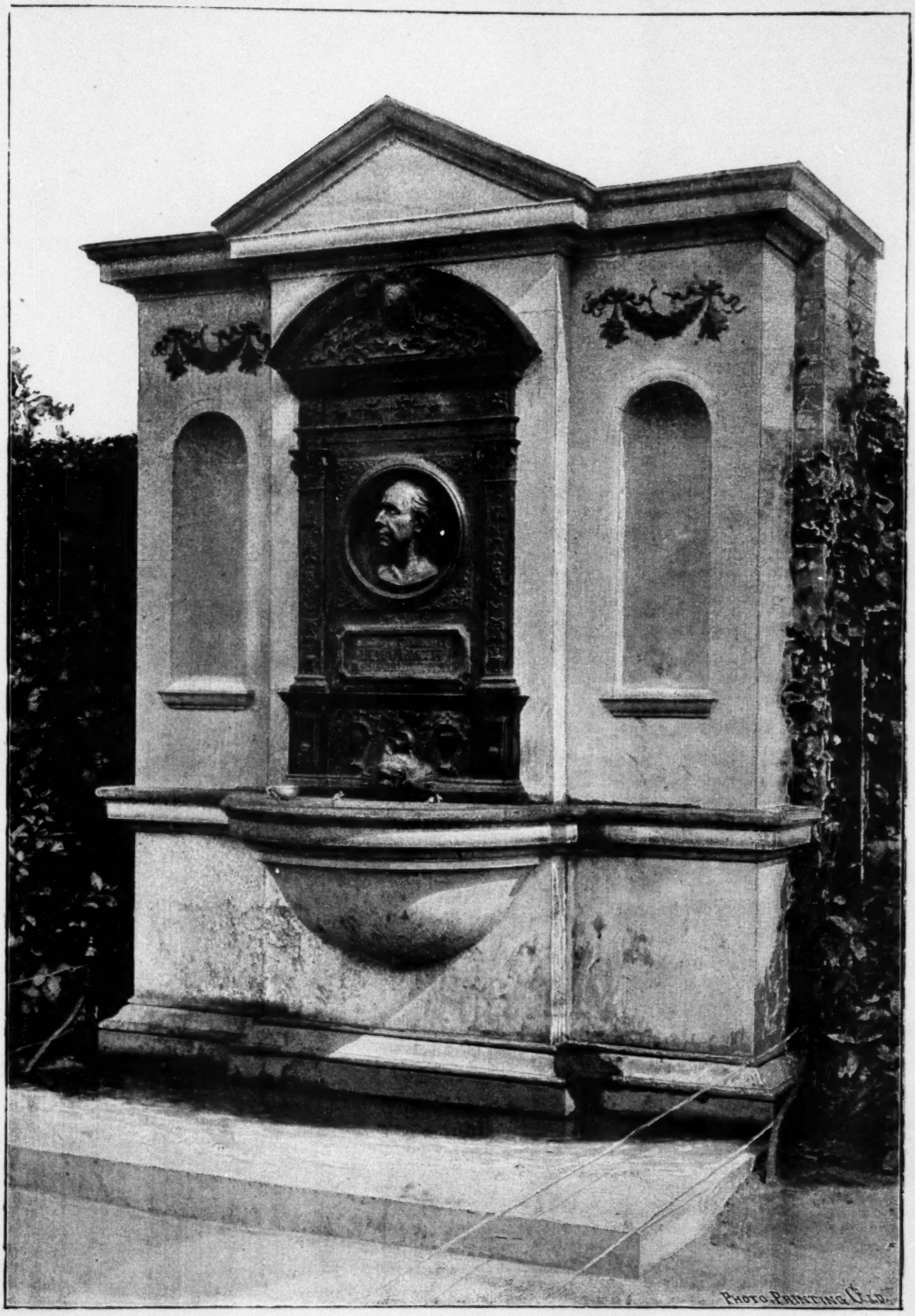
"PHOTO-LITHO," SPRAGUE & CO., 28, MARTINS LANE, CANNON ST., LONDON, E.C.

PARISH CHURCH OF ST. MICHAEL, MACCLESFIELD.—MR. J. STEVENS, F.R.I.B.A., ARCHITECT.



C F Kell Photo-Lith & Printer 6 Furnival St Holborn London E.C.

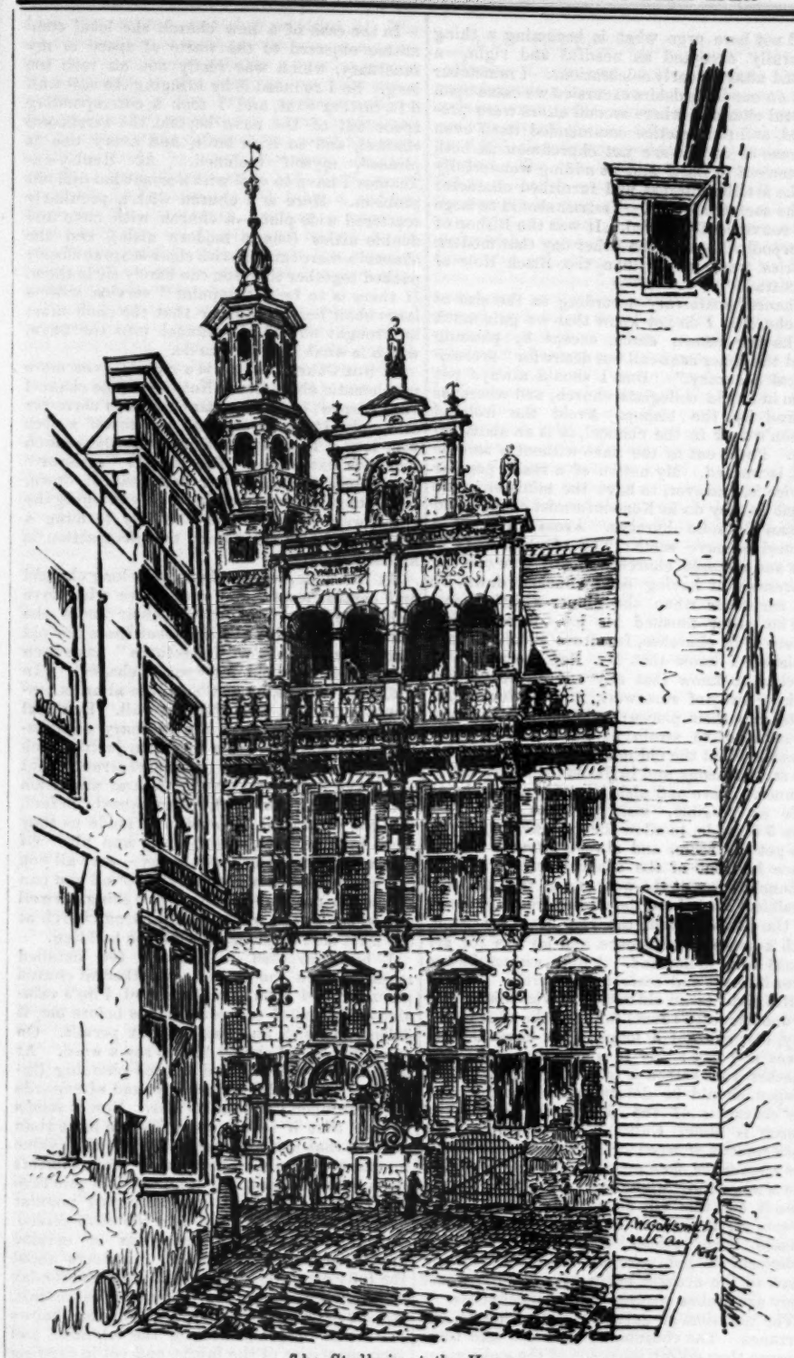
PREMISES IN THE EDGWARE ROAD.—Messrs. C. Eales & Son, Architects.



THE WOMEN'S FAWCETT MEMORIAL, EMBANKMENT GARDENS.

MR. BASIL CHAMPNEYS, ARCHITECT;

MR. GEORGE FRAMPTON, SCULPTOR FOR THE DECORATIVE PORTION; THE HEAD BY MISS GRANT.



The Stadhuis at the Hague.

THE STADHUIS AT THE HAGUE.

The Stadhuis has been restored and enlarged. The part shown in the sketch is the oldest, and is dated 1565. The lower part is built in stone, the windows have stone mullions and transoms, and small lead-lights, like those in the upper story. This part is built of brick, with white stone bands. All the window dressings, corbels, and cornices are of the same material. The pilasters have flutings, and are divided in height into four parts by stone bands. On the caps of these pilasters rest the corbels which carry the upper part, built in a fine white stone. It is divided into two bays by Ionic attached columns; each bay has two circular-headed openings, and by setting back the wall here a balcony is obtained. Above these arches on the right is a panel with the date "ANNO 1565," and on the left "Vigilate Deo Confidentes," and on the cornice over "Ne Jupiter quidem omnibus." In the panel over are the arms of the Netherlands, and on the right, left, and centre of the gable respectively figures of "Faith," "Hope" and "Charity."

The flèche seen in the sketch is on the front, towards the Groote Kerk.

This and the foregoing illustration are reproduced from sketches by Mr. F. T. W. Goldsmith.

Association of Municipal and Sanitary Engineers and Surveyors.—A meeting of the members of the Lancashire and Cheshire District is to be held at Warrington this Saturday, November 27th. Members will assemble in the Council Chamber of the Town-hall, at 11 a.m. After the appointment of an honorary District Secretary, the following paper will be read and discussed:—"Public Health Act, 1875, the 150th Section—Remarks on its operation, and suggested remedies for its defects." By Mr. W. Spinks, A.M.I.C.E., Dukinfield. In the afternoon, under the guidance of Mr. Longdin, Borough Surveyor of Warrington, the members visit Mersey-street Gas Works to inspect air-compressors for working Shone's ejectors for Latchford Sewerage, thence to Latchford, to inspect Shone's system in operation. They will subsequently visit Howley-lane Intercepting Depôt for collection of excreta, Lythgoe's-lane Intercepting Depôt, and, if time permits, the Manufacturing Depôt at Longford, Infectious Diseases Hospital, &c.

CHURCH PLANNING.

This was the subject of a paper read by Mr. J. D. Sedding at the meeting of the Architectural Association on the 19th inst.

Mr. Sedding remarked that, like every other architectural topic, the subject of church-planning had its historical as well as its artistic, its technical, and its practical sides. Architecture was something that had grown with the growth and progressed with the progress of mankind. Old buildings represented ideas that had "broadened down from precedent to precedent." Historical training and personal familiarity with old work were essential to the church-planner, but it was not from its historical or archæological side that designers usually approached the subject. It touched the practical life-work of the elder men and it touched the aspirations of the younger men. To the latter he would say: "Do not take up this or any other subject as unfledged specialists." Nowadays we had our "church," our "house," our "*café*," our "workhouse," our "theatre" architect. For a young man with a future to cultivate one branch of an architect's work at the expense of the rest was bad, for it was bound to make his work groovy, modish, and partial. Places of worship were of the earliest and noblest of historic buildings. He found a certain similarity in all alike, which was incident to the common incentive for their erection. Art and religion here joined hands. A creed was, after all, something to a man if it could prompt even the heathen to reverence and sacrifice. Heathen temples had always made noble Christian churches, because the heathen was in noble mood when he built them. There was such a variety of types of churches, each type having its own nursery-ground of local initiation and its sequel of wider influence when transplanted into the great garden of the world that he must leave the subject of the underlying *motif* alone, beyond sending his hearers, for reference, to Willis's "Architectural History of Canterbury Cathedral," which gave an admirable insight into Early church-planning. But to speak of the Basilican type of our churches and of the "Canterbury Influence" was to tell only half the tale. For the rest, his hearers should go to Mr. Micklethwaite's capital little tractate upon "The Growth of English Parish Churches." He would also refer them to Mr. G. G. Scott's valuable "History of English Architecture," and to Mr. Birch's learned treatise "Concerning the Fabric of the Church and the Form thereof," in the "Transactions of the St. Paul's Ecclesiological Society." It was his purpose now to glance at the development of primitive types of church-planning, as seen in different countries. In northern lands there were the churches of Canterbury, Wells, Maulbronn, Gelnhausen, Noyon, and Albi,—all typical, and all with their screens and nave altars. The Italian type is very different, even though monastic hands reared these fabrics as well as those already named. The characteristic of the two Florence churches of Sta. Croce and Sta. Maria Novella, and the church of S. Domenico at Siena, is that these churches took the shape of the *tau* (T), there being practically no upper arm to the cross that forms the basis of the outline of the church. Further, in the southern type nearly the whole of the church is given up to the people's use, while in the northern type the choir and sanctuary, which the monks and canons appropriated, consumed usually a full half of the whole church. Our parish churches were largely built by, or under the direct influence of, the monastic orders, the Benedictine influence being very prevalent. Mr. G. G. Scott summed up what, in his opinion, were the characteristics of parish churches thus:—(1) square end; (2) transepts lower than nave and not forming a crossing bay in the nave; (3) central western tower. Mr. Scott holds that, with rare exceptions, a tower should always be on the centre line east and west, either at the crossing or in the centre of the west end, the former being the collegiate or conventual type, the latter the parochial. Looking at church-planning as a practical science, he (Mr. Sedding) would say that a plan of a house of God should be fashioned to express and to evoke reverence; it should be simple and dignified, convenient without sacrifice to its devotional aspect; it should be beautiful yet useful; it should never lose a certain savour

of old times to remind church people of their long ancestry, yet all the while it should smack of the practical ideas of the present to secure a sense of reality; and it should suit equally the wants of ministers and people. That was the *rationale* of modern church-planning as he understood it, and, in view of all that, he would say a word upon the errand of the architect who built new churches or restored old ones. When he went into an old unrestored church which was chock-full of incongruities that shook the pedant's nerves, he was not a bit disturbed. He saw the slow accretions of slovenly times and the result of the Puritan inundation. There was a conglomeration of churchwarden naughtinesses innocently done, whose abstract propriety it never occurred to people to question when they were so familiar with them. But a faultily-arranged cathedral or parish church, modern or restored, made one gnash one's teeth. When he found,—as, alas! in nearly all the choirs of our cathedrals, and in a majority of parish churches,—the building huddled up with fittings that obscured architectural features, that prevented orderly movement, that ignored attainable artistic effects, that hindered the observance of liturgical rule, that produced disorder and took away the dignity of the building and all sense of sanctity, when one found altars jammed up or glued to east walls and their view intercepted by furniture, steps ill-disposed, higgledy-piggledy seats cramming passages, and things standing where they ought not,—then he traced a bungler's work; then he knew that however long the tail of initials attached to his name, the architect was deficient in skill, or care, or knowledge, or artistic or religious sense. "Some one had blundered," and the "some-one" was the blind architect who led his blind clients into this doleful ditch. Of course, one must not expect perfection in a revived science that was based for the most part on the results of recent ecclesiological research and the experiments of a few able architectural practitioners. He was bound to say that there was some excuse for ordinary practising architects, for they had really had no proper technical instruction: what they knew they had picked up for themselves. Moreover, in the conduct of church work they mostly had to do with committees, and even supposing that they (the architects) knew their business, the principles of church-planning were as much in the committeeman's line as the counsels of perfection. The committeeman was utilitarian or nothing. Like the man in a popular play, he "wants to sit down" in church, and wants to provide for others to "sit down," regardless alike of the purpose or the capacities of the structure. Philistinism of a scarcely more intelligent kind was sometimes found even in diocesan boards and in architectural boards of church-building societies. After showing that an architect might often get his own way by a common-sense way of putting his case to objectors, Mr. Sedding went on to say,—

As I am addressing young students, presumably for their edification, I will venture to give a hint or two upon planning and then proceed to demonstration. In planning a new church, having settled your general proportions, begin planning at the altar. This is God's house, and there are certain matters connected with the decencies and dignities of worship which are arbitrarily required, and it is well to comply with these at the outset. The altar will be of variable length, from 6 ft. upwards, to suit the width of the church, and from 3 ft. 3 in. to 3 ft. 6 in. high. One finds the tables of modern altars as much as 3 ft. wide, even where the space in front is cramped for room; but 1 ft. 9 in. or 2 ft. is ample for the ministrations of the priest. The foot-pace, or *planum*, should never be less than 3 ft. clear in front of the altar; and the deacon and sub-deacon's steps from 2 ft. wide. Having arranged for these three steps, as many more may be added as the size and character of the church demands. The method of returning the upper steps is rarely found in old English churches, the Benedictine builders used to carry all the steps across the chancel unreturned at the sides, as may be seen, for instance, in Gloucester Cathedral at the high altar and the Lady-altar. A common but cruel error, both for priest and communicant, is that of placing the communicant's rail on the topmost of two steps set close together. I have economised space in planning a new chancel by making the low chancel screen do duty as communicants' rail, as one sees done abroad. I need not here urge what is becoming a thing generally accepted as needful and right,—a second altar for early celebrations. I remember that on our Oxfordshire excursion we came upon several churches where second altars were provided, and the practice commended itself even to some of us who are not churchmen as both convenient in itself and as adding wonderfully to the artistic interest and furnished character of the sacred building. Vestries should be large and conveniently placed. It was the Bishop of Liverpool who said the other day that modern vestries were mostly like the Black Hole of Calcutta!

Chancel seats vary according to the size of the church. I do not know that we gain much by having return stalls, except by pleasing what the Americans call our desire for "archæological accuracy." But I should always put them in an old collegiate church, and wherever desired by the bishop. Avoid the isolated parson's desk in the chancel, it is an abomination. Put it out in the nave without a scruple if it is wanted. My notion of a really popular service is, however, to have the minister in the pulpit as they do in Nonconformist chapels and Roman Catholic churches. Avoid ugly gaps in chancel or nave seats. The chancel seats in new and restored churches mostly give one the impression of having been chucked down by the carpenter when the dinner-whistle went, and he never finished his job. Surely, as in houses so in churches, furniture should fit into a place. I know that Mr. Redtape would be shocked to know that any one advocated the hacking away of stonework, in order to fit your seats into their places; but, then, he is a man accustomed to strain at gnats and swallow camels. What the old masters did I do, and for the same reasons, and in the same unscrupulous manner. Nave and aisle passages should be as wide as possible,—aisle passages never less than 5 ft. wide, to allow for processions, if you can get the room, and always provide a good space in front of the chancel screen, and an unbenched bay at the west end of the church if possible. That there should be screens to fence off the chancel from the rest of the church, both a sense of reverence and an eye for art would seem to demand. A high screen always gives interest and scale to a church. What a pitiful sight is an old cathedral victimised into an unobstructed tunnel for the sake of a vista: why, one can get a longer vista down Gower-street any day! As to screens, the question whether your screen is to be high or low, close or open, should be determined by reference to the character of the people for whom the church is built. Cultivated people like high close screens of wood or iron; poor people like low screens, or open screens, if high; and they like a large rood, with the figure of the Saviour upon it, and this will either rest on your high screen, or, if there is no high screen, upon a trussed beam across the church. Always endeavour to get parclose screens: they add much to the artistic effect of a church where there are arches opening into chancel aisles.

The question of galleries is growing in importance. The churchman does not like them because they smack too much of the auditorium, with their stepped seats varied in height, and the architect thinks they are apt to destroy dignity. But where they are in the mind of the architect from the first they can be made to produce excellent effect. Mr. Pearson's churches at Kilburn and Red Lion-square show what effects can be got by galleries by a skilled architect. The Jesuits' Church at Antwerp gives an admirable treatment of galleries where they have even got altars at the east end of galleries. A most interesting Mediæval example of galleries is to be found in the Church at Flavigny, in France, where galleries stretch over three south aisle chapels, at the west and east ends of the nave. (See King's "Mediæval Architecture," vol. i.)

I venture now to give a few detailed examples from cases that have arisen in the course of one's own practice. An ounce of demonstration is worth many pounds of theoretic talk. I spoke just now of the misery of a pinched sanctuary. The treatment I have followed at St. Matthew's, Sheffield, and hope to shortly carry out at another modern church, St. Bartholomew's, Bethnal-green, is to add to the length of the chancel by absorbing into it the first bay of the nave. True, I am taking from the body to give to the head, but the head was disproportionate, and I am only making it of the proportionate size it should have been at the first.

In the case of a new church the local committee objected to the waste of space in my sanctuary, which was really not an inch too long. So I reduced it by bringing the east wall 6 ft. further west, and I took a corresponding space out of the nave beyond the structural chancel, and so it is built, and every one is pleased, myself included. At Henley-on-Thames I have to deal with a somewhat difficult problem. Here is a church with a peculiarly scattered wide plan,—a church with nave and double aisles (one a modern aisle), and the chancel a mere tunnel, with choir-seats so closely packed together that you can barely sit in them. If there is to be a "popular" service with a large choir here, it is clear that the choir must be brought out of the tunnel into the nave, which is what I propose to do.

At Box Church, Wilts, is a case of even more problematic character. Not only is the chancel very narrow, but the central tower is narrower still, only 12 ft. across, and the tower arches very low. To complicate matters, the church demands extension. The radical "restorer" would pull the old tower and chancel down, which ought never to be done. By bringing the choir west of the tower, and by forming a sanctuary under the tower, this destruction is avoided.

At Axbridge, where there is a long chancel and central tower, and wide nave with nave aisles, we have brought the choir under the tower. But in this and the other cases the old single row of stalls with "returns" have been restored in the old structural chancel. In Axbridge Church, as at Chard, the altar is projected some feet from the east wall. Practical reasons, such as affect the ordinary administration of worship, seem to me to justify such disturbance of the nave or chancel arrangement as I have indicated. No structural alteration is entailed in either of the cases named: in fact, the old structural chancels are made as they were in time past, return-stalls and all. Of restoration generally I would say,—*save* all you can of the immediate past, *recover* all you can of the far past, and *accommodate* things as well as you can to the wants of the living church at the least cost to the history of the building.

I had purposed to make a few detailed remarks upon the subject of cathedral church planning, and with Mr. Beresford Pite's valuable collection of cathedral plans before me, it is hard to resist, but time will not permit. On one point only I should like to say a word. At the outset we considered church-planning (including cathedrals) historically, and afterwards we dwelt upon its practical side. Now it seems to me that if there is one feature more than another that has historical and practical value in our cathedrals,—one feature that connects them with the past, and renders them practical for Divine worship of the approved popular kind in the present day,—it is the choir-screen. There is a wonderful consensus of opinion among both ecclesiastics and architects about the folly of our cramming our ordinary Sunday congregations into the choirs of cathedrals. No one defends the practice. Every one knows it to be in direct violation of the intention and true capacities of the fabric, and yet in desiring to mend matters the thoughts of reformers run only upon destructive and not upon constructive lines. They like to be radically original, to show what bold reformers can do! There are two ways of meeting the difficulty about the choir-screen that cuts our cathedrals in twain. The first way is to shirk the root of the matter by doing something that, while it relieves the strain upon the choir, does not really advance the popularity of the service in which a nave congregation is supposed to participate. The present undignified huddled-up arrangement of a cathedral service in choir is "popular" just because it is centralised,—altar, singers, canons, congregation,—all together. But once decentralise the service, and the "popularity" of the service is gone. The altar, the singers, the canons are far away. To cultivated people who use service-books it does not much matter whether the altar is 400 ft. or 500 ft. distant. Their minds follow what their ears cannot catch; but to poor people everything should be centralised, open, and easy of access. To remove the screen, then, is not to untie the knot, it is only to cut it!

It is a scandal to the English Church that she cannot make the naves of her cathedrals as useful for Sunday popular services as the choirs are for the week-day choir-offices. The old builders knew their ground: they knew

what they wanted, and they provided it. The old builders had to meet precisely the same case as ours,—they had to provide a popular service for the people in the nave, and so they put a people's altar in the nave,—perhaps under a canopy,—and if we were not so pig-headed and prejudiced nowadays we should meet the same identical needs by using the same identical means. Lord Grimthorpe has done many execrable, foolish things at St. Alban's, and has given to the nineteenth century a supreme example of how *not* to restore a historic building; but at least to him be given this negative praise,—he has not yet removed the nave altar and high stone screen behind it.

Mr. Sedding then proceeded to refer to, and comment upon, in general terms, the interesting and instructive collection of modern church plans kindly lent to him for the purposes of the lecture. The first thing to note was that Gothic still held the field for churches, as was to be seen in the work both of the elder and of the younger men, of the provincial as of the London architect, of the Roman Catholic as of the English Church designer. Amongst the plans exhibited and referred to were those of Mr. Norman Shaw's Church at Bedford Park; the late Mr. Street's Church of All Saints, Clifton; Mr. Norman Shaw's design for the Harrow Mission Church; Mr. Pearson's Church of St. Augustine, Kilburn; Mr. Bentley's new R.C. church at Brixton; Mr. Bodley's church at Roath; Mr. Waterhouse's church at Redditch; Mr. Gilbert Scott's church at Leamington; three churches by Mr. Ewan Christian,—viz., All Hallows, Bromley-by-Bow, St. Matthew's, Cheltenham, and St. Dionis's, Parson's Green, Fulham;—Mr. Johnson's church at Gosforth; Mr. Blomfield's church at Portsea; Mr. Fergusson's plan for the Church of St. Nicholas, Whitehaven; Messrs. Somers Clarke and Micklethwaite's churches at Gainsborough and Horbury; Mr. William White's new church at Battersea; Mr. Nicholl's plan for Wellingborough R.C. church; Mr. Tasker's Conventual Church at Highgate; Mr. Ernest Lee's church at Brentwood; and churches by Mr. Leonard Stokes, Mr. N. Wilson, and Mr. Vacher. In concluding his paper, Mr. Sedding said that a review of the church plans above enumerated afforded much cause for congratulation in the character of the "Gothic" they presented. It was not bloodless and simply reminiscent as it used to be, and there was much that was original that was at the same time a true complement of traditional work. With so much sign of vitality before them, who would talk of confiscating the hard-won laurels of the Gothic school? The evidence of free handling one saw here and there was a clear justification for holding on to the study and practice of Gothic as one of the styles that, where suitably used, could aptly and grandly render nineteenth-century thought. Another matter of congratulation to him (he spoke here personally only) was that the ground plans evidenced the recovery of the English church from the blighting malison of the Puritan. The plans exhibited looked like those of houses of God, and not merely like places for people to hire pews in. Let his hearers take away from the consideration of this intricate subject three simple lessons. Firstly, let them remember, in the words of Pope,—

> "Something there is more needful than expense,
> And something previous ev'n to tas'e,—'tis sense."

Secondly, let them see that, though their works in church-planning might be small, they brought a large spirit to bear upon them. Nothing was petty in church-building. The smallest details might be done well or ill. Thirdly, let them, while working in the wild scrimmage and hurtling bustle of nineteenth-century life, remember that their churches had still their ancient signification. Let them so work that Kingsley's words might ring in the minds of worshippers,—

> "All without is mean and small,
> All within is vast and tall;
> All without is harsh and shrill,
> All within is hush'd and still."

If they would realise the true meaning of a church they would be better architects in purpose and achievement. Their calling would gain dignity, their minds would learn more pliancy; their art would take higher range; their buildings would be more inspiring in themselves and be more serviceable to their fellow men. He that planned a good church was the friend of God and the friend of man.

[Some notes of the discussion which followed will be found on another page.]

NEW THREAD MILLS, PAISLEY.

Messrs. Coats, one of the principal thread manufacturing firms on the Clyde, are now erecting new mills which will give employment to several thousand females in addition to the 6,000 already engaged in thread-making in Paisley. The new building has a frontage of 392 ft. in length, with a depth of 132 ft.; and the parapet is 98 ft. above the ground. It consists of five stories; the ground floor being occupied by warehouse room, and by accommodation for scutching and carding. The first-floor will be occupied partly as bale and mixing-rooms, and partly for spinning purposes. The second and third floors will be devoted to spinning; and the top floor to spooling, hank-winding, ticketing, and packing. On this floor alone 700 hands will be employed. There will be three grand staircases, and five hoists. The foundation is of stone; the superstructure of red pressed brick from Wortley in Yorkshire. The interior is lined with white glazed bricks. The construction is fire-proof; rolled girders and joists being laid with cement concrete 8 in. thick; the stairs are of concrete, laid on wrought-iron. The engine-house is 80 ft. long and 38 ft. wide, to contain a pair of patent tandem engines of 1,600 horse power. The fly-wheel is upwards of 100 tons in weight, and 35 ft. in diameter; and has forty grooves for ropes to drive the machinery of the mill. The chimney, octagon in shape, is 300 ft. high, and 42 ft. in diameter at the base. It is built of pressed bricks. A spool-house, yarn-store, and gate-house have been erected in connexion with the mill, and schools for the half-timers are in course of erection. The second of these great buildings is an addition to the Anchor Thread Mills, which is being erected by Messrs. Clark & Co. The several floors and the flat roof are constructed on Homan's patent fire-proof system, which combines wrought-iron with Portland cement. The concrete used is so fire-resisting that a slab of it was put into a furnace and exposed to the heat for thirty hours, at the end of which it was found intact, and required a heavy sledge hammer to break it up. For 6 ft. above the floor, each story is lined with a new fire-resisting alabaster cement, known as Robinson's cement. There are five floors, the area of each being about 3,500 yards. The ground and top flats are each 18 ft. high, and the other flats 15 ft. 9 in. There are 173 iron columns on each floor, or in all 865. If joined end to end the main girders would be 3¾ miles in length, and the rolled iron joisting, if placed in the same way, would measure 23 miles. The building, which will cost some hundred thousand pounds, is to be devoted to the purposes of finishing and warehousing. The engines, having 25-inch and 41-inch cylinders, will indicate between 400 and 500 horse power. There are at the present time in connexion with Messrs. Clark's mills nearly a quarter of a million of spindles, and their annual output of finished cotton reaches the total of 1,875 tons. The mills are at present driven by engines of 8,500 horse power. The production of thread in Paisley has nearly trebled since 1872.

The Late Mr. Vulliamy.—At the last meeting of the Metropolitan Board of Works, Mr. E. Lawrence moved:—"That it be referred to the Works and General Purposes Committee to consider and report as to the desirability of obtaining power to pay to the widow of the late Architect (who served the Board upwards of twenty-five years) one-half of the commutation value, according to the Government tables, of the pension that had been voted to him." This was seconded. After some discussion, Mr. Shepherd moved, as an amendment, that it be referred to the Works Committee to consider the question of the superannuation allowance recently voted to Mr. Vulliamy, and report to the Board thereon. This was seconded and accepted by Mr. Lawrence, and was carried by 21 votes to 8.

Obituary.—The death recently took place of Mr. Ambrose Poynter, who had attained to a great age. He was appointed one of the three referees, "Official Referees" they were called, under the Metropolitan Building Act of 1844, 7 & 8 Vict., c. 84. This Act worked very badly, and was superseded by the Act of 1855. The Official Referees were pensioned, and Mr. Ambrose Poynter has enjoyed his pension ever since. Of late years he has been blind, but otherwise has had good health. He was the father of Mr. E. J. Poynter, R.A.

BUILDERS' BENEVOLENT INSTITUTION.

An election of pensioners on the funds of this Institution took place on Thursday afternoon last, at Willis's Rooms, St. James's, Mr. Basil E. Peto (President) in the chair. There were two vacancies for men, for which five candidates applied. The following is the list of the candidates, with the number of votes polled for each, according to the report of the Scrutineers (Mr. Thomas Stirling and Mr. T. F. Rider), viz., Ebenezer Robinson, Camberwell, aged seventy-two, builder, 1,784 votes (including 953 from last election); James Picking, Clapham, aged sixty, builder, 318 votes (including 74 from last election); John Emery, Kentish-town, aged sixty-five, builder, 1,799 votes (including 200 allowed for former subscriptions); Edward T. Roberts, Wandsworth, aged sixty-seven, builder, 786 votes (including 60 allowed for former subscriptions); and George N. Cott, Brixton, aged sixty-eight, builder, 227 votes.

John Emery and Ebenezer Robinson were therefore declared to be the successful candidates.

Mr. T. G. Smith proposed, and Mr. Richardson seconded, a vote of thanks to the chairman; a similar compliment being paid to the scrutineers, and to the other gentlemen who had taken part in the proceedings.

THE OFFICE OF SUPERINTENDING ARCHITECT.

At the meeting of the Metropolitan Board of Works on the 19th inst., Mr. Geo. Edwards, Deputy-Chairman, moved, on the recommendation of the Works Committee:—"That the resolution of July 2nd, 'that the salary of the Superintending Architect be 1,500*l.* a year, inclusive of travelling and incidental expenses,' be revoked."

A long discussion followed for and against the motion, which was ultimately carried by thirty as against thirteen. On a division the motion was confirmed by thirty as against twenty-one.

Mr. Edwards then moved:—"That the resolution of the same date, 'that the age of the person to be appointed to the office of Superintending Architect be not less than thirty-five, and not more than fifty years,' be revoked."

This was carried by thirty-eight to four.

Mr. W. R. Selway then, in pursuance of notice, moved:—"That the resolution of the Board of the 2nd of July, 'that the duties of the office of Superintending Architect do remain as at present,' be revoked." He reminded the Board that the appointment was made under the Building Act, and the Superintending Architect's duties were defined in relation to certain proceedings of District Surveyors, and it was expressly declared that he was not to undertake any other duties excepting such as the Board might impose upon him. The Board had, however, travelled very widely from the regulation mentioned. When the late Superintending Architect was appointed, he had nothing else to do but to discharge the duties of that office, but the Board afterwards gave him the charge of regulations *re* petroleum and the supervision of "baby-farms," but of those and other anomalous duties he was subsequently relieved. The duties at present imposed by the Board upon the holder of the office were thus enumerated by the hon. member:—The superintendence of the work of seventy-one district surveyors, the consideration of a yearly average of 300 cases of frontage questions, 100 plans of new streets, applications for special buildings, dangerous structures, the charge of the architectural design and construction of all the Metropolitan Fire Brigade Stations, the superintendence of over 1,900 acres of parks and open spaces, the direction of the requirements of theatres and music-halls, respecting construction. The direction of the construction of artisans' dwellings; and in addition to these there was the management of all the estates of the Board. Six millions and a half of money, or over a million a year upon an average, had been expended on property required in connexion with street improvements, bridge approaches, artisans' dwellings schemes, &c., and for the valuation of all this the Superintending Architect was responsible. The Board's estates, from which there was a revenue of 100,000*l.* a year, and other estates not yet dealt with of the value of 2,055,000*l.* odd, which would bring another recoupment of half a million yearly, were also under the supervision of the late Superintending Architect. Under these circumstances, he (Mr. Selway) was strongly of opinion that what ought to be

done was to re-arrange the Architect's Department, as it appeared to him that one man was unable to attend to its present multifarious duties.

Mr. J. Jones seconded the motion, which, after considerable discussion, was lost by 26 to 22 votes on a show of hands, and by 28 to 22 on a division.

THE ARCHITECTURAL ASSOCIATION.

THE third meeting of this Association for the present session was held on the 19th inst., at No. 9, Conduit-street, Mr. J. A. Gotch (President) in the chair.

The Chairman.—Before we proceed to the business of the meeting, I would call your attention to the post-card which you have all received, with regard to the proposed memorial to the Queen in regard to the Supplementary Charter which has been applied for by the Institute, and I will conclude by moving a resolution from the chair. A very few words will suffice to preface that action. The Association, of course, as a body, is not concerned in matters which relate to professional practice to any great extent, and it would not, as a rule, interfere in what may be called the political matters of the profession; but as an educational body it is very much interested in such portions of the proposed Supplemental Charter of the Institute as affect education; and, as a large part of the new powers to be granted by that Charter will affect architectural education, both as to the means of increasing educational advantages, especially in connexion with the Architectural Examination, the Committee, after considerable deliberation, think it most desirable that this body, being interested so deeply as it is in educational matters, should do what it can to support the petition for the Supplementary Charter. Therefore, without further remark, and not to keep you from the entertaining paper with which Mr. Sedding is about to favour us, I beg to move from the chair:—

"That the Architectural Association should memorialise the Queen in Council in support of the Supplementary Charter presented by the Royal Institute of British Architects, inasmuch as it will, if granted, materially advance the special educational objects which the Architectural Association has in view."

Mr. Leonard Stokes seconded the motion, which was carried by acclamation.

Mr. H. D. Appleton (Hon. Secretary) then read the memorial, which set forth that the petitioners constituted a society which had been established for more than forty years, was composed of architects and architectural students, numbering over a thousand members, resident in London and the provinces; that the petitioners' society had for its chief object the furtherance of architectural education; and that the provisions of the proposed supplemental Charter of the Royal Institute of British Architects now before Her Majesty in Council were calculated to promote the advancement of architectural education, to the benefit of the public. They therefore prayed Her Majesty in Council to grant to the Royal Institute of British Architects the proposed Supplemental Charter.

The Chairman added that this memorial would be signed by the President, Vice-Presidents, and other officers of the Association, and would be forwarded at once.

Mr. J. D. Sedding read a paper on "Church Planning," for which see a previous page.

The President, in inviting discussion, said he invariably found himself the better after listening to Mr. Sedding's views, although he could not always agree with them. In many things their views were diametrically opposite, but, at the same time, everything that Mr. Sedding put forward he had found to be most suggestive. That evening they had been favoured with an excellent paper, with the scope of which he entirely agreed. The paper, too, was marked by a quality which was so important in architecture, that one should do the very best to solve the particular problem one had in hand at the moment. Mr. Sedding represented a particular school or set of views, consequently his church architecture would assume certain characteristics; but he had entirely omitted an extremely interesting type of church, which, equally with his own churches, illustrated the views held at the time of their erection. He referred particularly to the City churches of Wren, which were as different from Mr. Sedding's ideal of the church of the present day as it was possible for two types of churches to be. Nevertheless, there were many such churches of extreme beauty and excellence in architecture, illustrating a certain set of views which were then held, and which no doubt Mr. Sedding would consider the effect of "the blighting malison of Puritanism." And further, it was quite conceivable that even nowadays there might be men holding views nearly approaching those which produced the churches of Wren's time. Therefore the young architect ought not to go into the work of church-planning with preconceived notions that there was only one type, and that a High Church type, because in that case he might find himself diametrically opposed to the views of his clients. In the present day there was a great deal of life among those who built churches; the parsons and the architects were acting and reacting on each other, the result being a tendency towards a more distinctly ecclesiastical type of thought, which, no doubt, was quite right. Mr. Sedding had laid some stress on the value of an "ambulatory," but there were people who did not consider an ambulatory essential to salvation. It had also struck him as curious to hear Mr. Sedding using the term "narthex," which, when it had a real practical use, was the place reserved for catechumens. When, therefore, a narthex was made to a modern church it seemed to him that it had no *raison d'être*. Mr. Sedding had also referred to the desirability of having a second altar. Owing to the conditions of life at the present time it was difficult to get a large congregation at the early morning services; therefore a second altar, attached to a smaller space, chapel or otherwise, was obviously a great convenience, and would avoid the desolate appearance which he had sometimes observed at services in parish churches. Mr. Sedding had regretted that at the Architectural Association excursions the members sometimes sketched cottages instead of church architecture. It did not, however, fall to every man's lot to build so many churches as Mr. Sedding, and to some men domestic architecture was of chief interest. He did not think it was entirely owing to the fact that there was a cessation of interest in church architecture, but the tendency of late excursions had been rather in the direction of a preference for domestic buildings. One thing was certain,—whether the members agreed with Mr. Sedding or not they must all be of opinion that he had given them a most interesting paper.

Mr. William White, F.S.A., proposed a vote of thanks to Mr. Sedding. With regard to the City churches, it seemed to him that although they were so diverse from the old Mediæval buildings in the matter of architecture, yet the general feeling of church-planning did succeed not only through their generation, but subsequently. For in all cases thoroughly well developed chancels were to be found; and he maintained it was the grand scheme, so to speak, of the English church, as distinguished from all outside churches, to have a thoroughly distinctive chancel, apart from that portion of the church which was appropriated to the laity. No one now attempted to carry on the service in a well-conducted church without a choir, and it was impossible to organise an efficient choir without a properly developed chancel. When he produced the plan of St. Stephen's, Battersea, he did not consider it his "ideal" of what a church plan ought to be, but it was the "ideal" of what that particular church should be. It was the last, he believed, of the Bishop of Rochester's ten churches, intended to provide accommodation in the best possible manner for the poor. Had he known, however, to what flights Mr. Sedding intended to carry his auditors, he would have brought a plan which better represented his ideal of what a church ought to be, viz., that of new St. Mary's, Battersea Park. This was a large and well-developed church, where the clergy could hold their conferences, and which consequently had a good sized building attached to it on the north side of the chancel. It was specially designed as a "Minster Church" to the large parish. As to chancel steps, it was not so much a question of whether there should be a number of these at the chancel, or the altar, but that they should be so carefully graduated as to give a good perspective to the chancel from the nave; for unless care was taken a great deal of dignified effect would be lost. Another thing which was objectionable in so many modern churches was the height and crowding together of the stalls. A narrow chancel should only have a single row of stalls and not a row for boys on either side, otherwise it became inconveniently crowded and took away all the dignity of the effect. About thirty years ago he took some details of Lincoln Cathedral, when he found the original choir-stalls, disguised to a great extent with higher erections, were far lower than the great majority of the stalls now put into the chancels of even small village churches. He would, therefore, caution his hearers to beware of making their stalls too high, thus lowering the chancel and taking away its dignity. There was one point to which Mr. Sedding had not alluded, but which was of practical interest, viz., that of building a church with the largest span of nave possible and the smallest narrowness of aisles. Unless great care were used in the proportions of a large church very considerable difficulties might ensue in the acoustic effects. Again, if the finest effect had to be produced for a limited sum of money, it was necessary to have aisles rather than one broad span; and to widen the aisles rather than the main roof.

Mr. E. C. Robins, F.S.A., seconded the resolution, adding that what had impressed him that evening more than anything else was the enthusiasm displayed by Mr. Sedding in describing his subject. Architecture depended as much on enthusiasm in its study as upon anything else. For himself, he might say that, until he read Ruskin's "Stones of Venice," he had never felt the enthusiasm for architecture which he had ever afterwards experienced; it being quite a revelation to find the thoughts Ruskin put into one's mind by his description of the buildings of old. Some fifteen years ago he (Mr. Robins) read a paper before the Association on the subject of "Churches for Congregations"; but that evening they had heard a lecture on "Churches for the Clergy" (Mr. Sedding: "No, no") and for the services which seemed most to the minds of many people. He had very great sympathy with both sides; their differences did not trouble him at all; but he liked a church in which he could both hear and see, and which was at the same time grand and beautiful. Enthusiasm like Mr. Sedding's would make them do the humblest building in such a spirit as to render it a charming work.

Mr. C. M. Hudson remarked that Mr. Sedding had emphasised the altar-screen between the chancel and the nave as marking the distinction between the clergy and the laity; but it depended very much from what theological point of view we approached the subject. He should like to say a few words on the subject of organs and their treatment. Nowadays an organ was an essential part of the furniture of even a small parish church. The organ-builder had often a very considerable grievance. A large church was built. The congregation wished to have an instrument worthy of it, and so a specification was handed to the organ-builder for a fine instrument. He, perhaps, on examination, found he had only a small space in which to put it, and consequently a noble instrument was frequently spoiled by want of proper attention on the part of the architect.* More care should therefore be given to the location of organs, He spoke not only as an architect, but as a practical organist.

Mr. Sydney Vacher said he was convinced that a cheap church could be made beautiful by studying a good plan, and putting in simple and well-proportioned details, in the spirit of the old Gothic architects. One could not hope to do that well unless one was continually sketching old architecture. Every church architect was bothered by the organ-chamber, and very frequently the clergy wished to put in a bigger organ than the building would hold. A big organ in a small church was all very well, but he always fancied that the organ should be for the church, and not the church for the organ. With regard to the chancel, if there was plenty of money it might be spent freely upon that part of the building, by making it as glorious as possible. Everybody must be convinced that where a morning chapel could be had, it was a most desirable thing to have, besides being useful in every plan, by giving an exit for the communicants from the chancel. He would also design a church with as wide arches as possible from east to west, thus allowing the congregation to see to the utmost.

* The great German organ-builder, Schulze, on one occasion, we were informed, entirely declined a commission, rather than build one of his instruments in the conventional cramped English "organ-chamber."—ED.

The vote of thanks was then put, and very cordially received by the members.

Mr. Sedding, in his reply, said he was very much disturbed by a friend of his in the room imagining he went in for churches for the clergy, that being just the very thing he did not do. As to Wren's churches, surely St. Paul's was a noble building in the way of its suitability to divine worship, and would satisfy most people's idea of what a church should be. St. Peter's, Cornhill, had a chancel-screen, but they must not suppose that the old fellows were not quite sensible of the necessity of providing accommodation for the ministers; but there were only two then,—the parson and the clerk,—whereas now we had choirs, and our ideas of worship had expanded. Objection had been made to the altar-screen. He had said distinctly he was treating the subject historically, and then practically; and he had drawn a clear distinction between screens for churches which were attended by the rich, and those which had a poor congregation, because he held that what was perfectly admissible in a church meant for cultivated people, was quite inadmissible in a church built for the poor. The magnificent naves in the Roman Catholic countries showed how well the poor were provided for. Another point he had intended to allude to in regard to the Wren churches was this,—Let them take fifty years of modern church-planning, and a similar period of the seventeenth century, and they would see the immense variety Wren had constructed, as compared with the moderns, with their continual hammering away at the Cruciform and Devonian types of church.

LIGHT AND AIR.

ALSOP *v.* GWINNELL.

A CASE was heard before Justice Kekewich on Tuesday last, as to whether the raising the front wall in the rebuilding of the Marlborough Head by 20 ft. 6 in. had affected the light and air of No. 23, Great Marlborough-street, opposite, which is occupied by Messrs. Alsop, Mann, & Co., solicitors. The Marlborough Head is distant from the plaintiffs windows at the nearest point 55 ft., and at the farthest point 75 ft. from the plaintiffs' premises; the total height, including the raised portion of the Marlborough Head, is 60 ft. 6 in. Mr. Warmington, Q.C., and Mr. Barber, Q.C., were the counsel engaged.

The surveyors engaged were Mr. Wilson and Professor Kerr for the plaintiff, and Mr. Chatfeild Clarke and Mr. Banister Fletcher for the defendant.

Verdict for the defendant, with costs.

Antiquities of the Isle of Man.—The third ordinary meeting of the current session of the Liverpool Architectural Society was held in the society's rooms, on Monday evening last, Mr. G. E. Grayson, president, in the chair. Messrs. T. Harnett Harrison, Henry Shelmerdine, and Edgar Eccles were elected members. A paper was read by Mr. J. H. M'Govern on the "Antiquities of Kirk Braddan Cemetery and Peel Castle, Isle of Man." Mr. M'Govern stated that Ptolemy classed the Isle of Man under the head of Irish islands, and the Manxman belonged to the Goidelic branch of the Celtic race. Referring to the Runic crosses at Kirk Braddan, he pointed out that the difference between the Celtic and Scandinavian runes was that the former were known by their ornaments of geometric interlacing of Celtic names, and the latter by their draconic ornaments and Norse names. The inscriptions are in a Norwegian dialect, and written with a Scandinavian alphabet; the letters are termed runes, and the alphabet bears the name of the Futhork from the first six runes. The origin of the runes has been from the Hellenic alphabet used in the Greek colonies on the Black Sea, sixth century B.C. Mr. M'Govern held the Round Tower in the castle grounds to be of Irish Celtic design. The round towers were used as belfries for summoning people to worship in connexion with chapels, and not, as some authorities held, as watch towers like the Danish ones, or as ecclesiastical prisons.

Liverpool.—The Welsh Presbyterian chapel, in David-street, was re-opened on the 6th, after alterations and additions, from the designs of Mr. T. G. Williams, of Liverpool. The main features of the alteration are the different construction of plan, which formerly had transepts, the main walls being removed and rebuilt in a line with the transept walls on the east and west sides of the chapel.

APPARATUS FOR SUN-COPYING OR HELIOGRAPHY.

THE heliographic copying of engineers' drawings is now used in many of the engineers' and architects' offices in Europe and America. Its advantages are rapid and faithful reproductions of the most intricate tracings of drawings and caligraphy. The various processes for producing white on blue, black and blue on white grounds, are described in the last volume of the Institution of Civil Engineers, in a paper by Mr. B. H. Thwaite on Heliography.

The ordinary apparatus for heliographic printing consists in a printing-frame large enough to take the tracings to be reproduced, and a developing bath. The latter, if of the ordinary form, takes up a considerable amount of floor space in an office and requires to be replenished with water almost every time it is used. The annexed figure 1 shows the arrangement invented by Mr. Thwaite, C.E

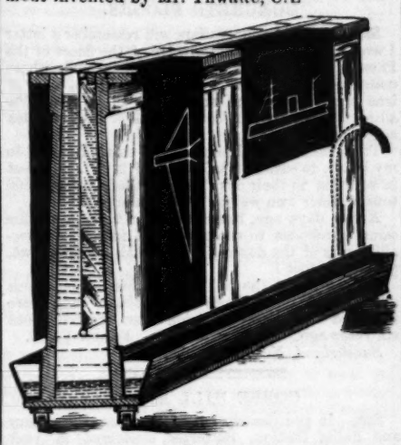


Fig. 1.

This developing bath possesses the following advantages:—

It is compact; self-clearing, as all the salts unacted upon are precipitated to the bottom and can be drawn off every few months. It is far more effectual and rapid than the ordinary bath. It has been used continually for six months, and, although it has only once been replenished with clean water, it is still quite perfect in its action.

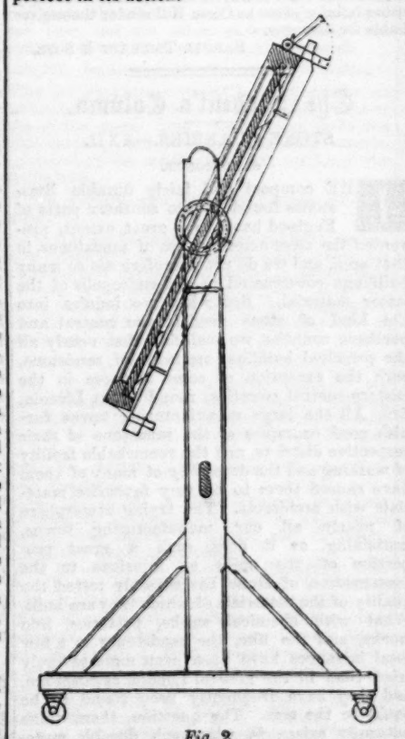


Fig. 2.

The printing-frame used by Mr. Thwaite is shown by fig. 2. It is so arranged as to be easily adjusted to the rays of actinic or sunlight. The heliographic apparatus and prepared paper can be obtained from the Victoria Drawing Office, 15, Ashcroft-buildings, Victoria-street, Liverpool.

CASES UNDER THE METROPOLITAN BUILDING ACT.

SPACES IN THE REAR OF DWELLINGS.

AN important decision was given, on the 17th inst., by Mr. D'Eyncourt, the magistrate at the Westminster Police Court, in the case of Clarkson, District Surveyor of North Chelsea, *v.* Thorn, which had reference to the provision of open spaces in the rear of dwellings, as required by Section 14 of the 1882 Act (45 Vict., ch. 14). The Section states that:—

"Every new building begun to be erected upon a site not previously occupied in whole or in part by a building, intended to be used wholly or in part as a dwelling-house, shall, unless the Board otherwise permit, have directly attached thereto, and in the rear thereof, an open space exclusively belonging thereto . . . ."

The sizes of the spaces are regulated to suit the frontages,—150 ft. for 15 ft. frontage; 200 ft. for 20 ft.; and 450 ft. for 30 ft. and more. The magistrate decided in effect (1) that a coachman's rooms over stables bring the building of which they form part under Section 14; (2) that even when the rooms of such a building are lighted from a street (or mews) adjoining, the open space must still be left in the rear, as enjoined by the Section; and (3) that "a site not previously occupied in whole or in part by a building" means the site of the individual building in question, and not the whole plot or field, of which the site of the individual building once formed part.

The case was one in which Mr. S. Flint Clarkson, District Surveyor for North Chelsea, summoned Mr. A. Thorn, builder, in respect of No. 5, Henniker-mews, Callow-street, part of the Elm Park Estate, the premises selected being similar to a number of others proposed for the same mews. The depth of the building was about 17 ft., and the frontage being 32 ft., a clear space of 450 ft. was named in the Notice of Irregularity as required under Section 14. Mr. Clarkson conducted the case personally; Mr. Thorn being represented by counsel (Mr. Mead).

The builder's notice before commencing was for "Stables, with coachman's rooms over." Mr. Mead contended that these might not be intended for residential purposes, stating that, as much loss and possibly penalties might be involved if an order were made by the magistrate, all objections should have weight, and very strict proof be required. A plan of the rooms was produced by the District Surveyor, showing that they consisted of living-room, bedroom, scullery, and water-closet,—a small residential flat,—reached by a staircase from the ground story.

The scullery and water-closet were to be lighted from the roof, and the living and bed rooms by windows in the front wall, next the mews. Mr. Mead contended that the 29th Section of the Act of 1855 would therefore apply, and not Section 14 of the 1882 Act; and, that if this contention were correct, no open space would be required in the rear of the building.

The site of the building in question formed part of Chelsea Park,—that is, of the grounds surrounding the mansion-house so called, which was pulled down a few years ago. The distance between the nearest corner of the mansion-house and No. 5, Henniker-mews, would be about 300 ft. It was pointed out by the District Surveyor that in the Act of 1878, which is to be construed as one Act both with the Act of 1855 and that of 1882, "site" is defined, and limited to the area of the individual building. Mr. Mead cross-examined on this point, and it was stated that these spaces in the rear of buildings secured a current of air on both sides of buildings used for dwellings; that otherwise a block of new buildings, 30 ft. to 40 ft. thick, forming "back-to-back" dwellings, might run for a long distance without any open space except the narrow streets. Mr. Mead stated he would not press his argument on this point.

On the Magistrate stating that he should be prepared to make an order in accordance with the notice of irregularity, Mr. Mead consulted with his client and the District Surveyor. Mr. Thorn promised that the buildings should not be used as dwellings, and agreed to make such alterations in the internal arrangements as would, in the opinion of the District Surveyor, render them unfit for dwellings. Mr. D'Eyncourt upon this agreed to hold over the matter for a month in order that such works might be done.

WOODEN BALUSTRADES OVER BAYS AND PORTICOS.

SEVERAL builders carrying on operations in Canfield-gardens, West Hampstead, have appeared before Mr. Cooke at the Marylebone Police-court, on summonses taken out by Mr. Thos. Blashill, the District Surveyor, for erecting wooden balustrades over the bays and porticos in front of houses, the material being combustible, and therefore, it was contended, contrary to the requirements of the Building Act.

Mr. Blashill said the object of the summonses was to test a point which both he and the defendants

desired to be decided by the Court. He relied on the first clause of the 26th section of the Act, in which it was laid down that the material to be used must be "brick, tile, stone, artificial stone, slate, cement, or other fireproof material." The houses in question were attached to other houses, and did not come within any exceptional clause. He had examined the material of which the balustrades were made, and found it to be wood. A number of houses had been built in the same way, and in order to test the question he had taken out the summons, and now asked for an order for the removal of the balustrades.

Mr. Estcourt, one of the defendants, said he had stopped using the wood, but he submitted that the balustrades did not form any part of the main building. They were quite separate, being fastened by a hook and eye at each end of the balustrade, the hook or eye being fixed into the main building. They were, in fact, very much like a fire-guard which fastened on to a grate, and could be lifted off at will. Hundreds of houses had been done in the same way. The hooks were fixed into the wall on either side of the balustrade.

Mr. Cooke said that looking at the object of the balustrade, and after hearing the explanation of the defendant, he did not think it formed part of the building, which, in his opinion, must be enclosed or not removable. He had never before had such a case before him for decision, and he was quite ready to give it further and more careful consideration if it was desired.

Mr. Blashill said he would not ask for that, but was willing to leave it in the hands of the magistrate for him to decide without delay.

Mr. Cooke said that as that was so, he should decide that the balustrades in question did not form part of the building, and the summonses would be dismissed.

SCIENCE AND ART DEPARTMENT EXAMINATIONS.

SIR,—Now that the result of the examination in building (Science and Art Department) is known, may I ask you to publish the following comments, which may have the effect of altering a far too stringent rule?

The examination consists of two parts,—Part I. a paper of questions, and Part II. preparation of design. It is the latter I wish to refer to.

If the answers to the question-paper are satisfactory, a printed form is supplied to the candidate with particulars of the design required, which is something like the following:—"The candidates to prepare a design for a country residence with the following accommodation: dining and drawing rooms, each 320 ft. superficial; library, study, eight bedrooms, with the usual offices. Elevations to be draw to a scale of ¼ in. to the foot, plans and sections to ⅛ scale; also a small block plan, with a short description of the works and detail drawings where necessary." This, sir, to be done in the short space of twenty days.

Now, I was under the impression that this examination was for the advancement of technical knowledge of workmen, foremen, &c., and not for persons who could devote the entire twenty days to it. Is it not inconsistent to suppose that any man engaged in business during the day could possibly prepare such a design properly coloured and finished in such a short space of time. The question is answered by looking at the results. It is seldom more than five persons pass out of hundreds who try.

A COMPETITOR.

SANITARY INSTITUTE EXAMINATIONS.

SIR,—Will one of the successful candidates in the recent Examination under the Sanitary Institute of Great Britain kindly tell me the best works to study in preparing for a future Exam.? If so, he will greatly assist,

SANITAS.

PRIME COST AND PAINTING IN TINTS.

SIR,—I shall be glad to have the opinions of your readers upon the above subjects.

1. "All prices of articles mentioned are to be P.C. prices in London; add, therefore, profit, carriage, and fixing, and include same in contract."

Is the term "P.C." in the above clause generally understood by architects and builders to mean the prime cost after the deduction of all discounts, including the cash discount, if any?

2. "All work to be done in four oils, in tints."

Does the word "tints" mean that the work may not have more than two colours or shades of colour on it, or would it allow of three or more colours or shades of colour?

B. H.

WATER-COLOUR DRAWINGS.

SIR,—May I ask, through your columns, if there are any safe means of eradicating damp spots from water-colour drawings; or, failing that, if it is possible to stop the mischief from spreading when it has once put in an appearance?

Any information on the subject will greatly oblige,

COLLECTOR.

ALL SAINTS' CHURCH, PETERBOROUGH.

SIR,—In your paper of last week [p. 749, *ante*] it is stated that the design of Mr. J. Martin Brooks was placed second. This is not correct. The design placed second was by Messrs. Weatherley and Jones, under the motto "Ad te Domine"; and it is only fair to these gentlemen and to all concerned that the mistake should be corrected.

ONE OF THE COMMITTEE.

*** The statement was made on Mr. Brooks's authority. We had already received a contradiction of it from Messrs. Weatherley and Jones, on receiving which we wrote for authoritative information to the Secretary of the Committee. He informs us that Mr. Brooks's design was certainly placed second on architectural merit alone, but that considerations of cost put it out of court practically; and that Mr. Brooks may, therefore, have had reason to think he was justified in the statement. We must hint, however, that strict accuracy in statements made for publication is very desirable.

CONCRETE FLOORS.

SIR,—Some of your readers will remember a letter I wrote you last year descriptive of the floors of the Phœnix Fireproof Warehouse, Sunderland, where many of the slabs are 22 ft. by 12 ft. 6 in., clear of iron or other supports, and about 12 in. thick, the admixture being 1 of cement to 4 of broken brick aggregate.

These floors were designed, as I think I stated in my letter, to sustain a safe load of 2 cwt. per foot in addition to their own weight (there being 1,800 tons of their own weight in the building).

A few days ago, having some extensions of this same warehouse to superintend, I found considerable areas of the flooring loaded with 4 and 5 cwt. per square foot!

No one about the building doubts the enormous strength of these floors now, though they were regarded with great suspicion when erected about six years ago.

FRANK CAWS.

Sunderland, Nov. 23, 1886.

CORSE HILL STONE.

SIR,—In you description of the New Dispensary and Relief Station, Battersea, contained in your issue of the 30th ult. [p. 649], we notice you describe the window heads and cills of this building as being out of red Corse Hill stone.

It is true that Corse Hill stone was specified to be used by the architect; but, unfortunately, as in many other instances which we could name, another and inferior stone has been substituted.

We shall be glad if you can kindly find a space for this letter in your columns, as these continued substitutions of inferior stones for Corse Hill are materially damaging the reputation of the stone and our trade; and not only so, but it is an infringement of our trade mark, for which parties knowingly using inferior stone as Corse Hill render themselves liable for damages.

SAMUEL TRICKETT & SONS.

The Student's Column.

STONE QUARRIES.—XXII.

SANDSTONES.

THE compact and fairly durable limestones found in the southern parts of England have, to a great extent, prevented the more extensive use of sandstones in that area, and we do not therefore see so many buildings constructed in the metropolis of the latter material. But when we inquire into the kind of stone used in the central and northern counties, we shall find that nearly all the principal buildings are made of sandstone, with the exception of some of those in the eastern-central counties, round about Lincoln, &c. All the large manufacturing towns furnish good examples of the sandstone of their respective districts, and the remarkable facility of working and the durability of many of them have caused them to be very favourite materials with architects. The trying atmosphere of nearly all our manufacturing towns, containing, as it does, such a great proportion of the acids so injurious to the preservation of stone, has severely tested the quality of the materials of which they are built. What with chemical works, potteries, iron works, and the like, the sandstones in a few local instances have been even more severely tried than in the general London atmosphere, and they have frequently been found to be equal to the test. The question, then, which naturally arises is, why such durable materials do not find their way in larger quantities into the London market? Is it that their appearance is against them? Or is it because they are not sufficiently known? We suspect it is rather from the latter than the former cause, influenced, perhaps, also by pecuniary considerations.

After the colour of a sandstone to be used in a certain edifice has been determined, the next point usually looked at is its chemical analysis. We do not at all see why this should be so, or why all other things should be subservient to its chemical composition. Any one who chooses to reflect on the subject will soon see that as sandstones in the vast majority of cases are almost wholly made of grains of sand, and that as this sand is mostly quartz, and quartz is silica, the chemical composition of a sandstone is generally from 93 to 96 per cent. of that oxide, and the remainder, chiefly lime, iron, and alumina, varies almost as much in quantity from specimens from the same quarry as from those obtained from widely separated areas. The information which the chemical composition of a sandstone imparts, from a purely practical point of view, is thus shown to be almost valueless in estimating its durability. Even when the analysis shows the presence of 1 to 2 per cent. of lime, it does not tell us how it is distributed in the stone,—whether it exists in some hard crystalline mineral (which, like the quartz grains, has been derived from the destruction of crystalline igneous rocks) or whether it forms part of the cementing material compacting the grains of sand; and these are the points which must be settled before a satisfactory conclusion can be arrived at. Again, if the analysis shows that the sandstone under discussion contains, say, 98 per cent. of silica, it fails to indicate that any of this is present in the form of a matrix. Some writers would seem to imply that from the mere fact of a stone containing such a very high percentage of silica, it must also of necessity be hard and brittle, by reason of some proportion of that chemical forming the matrix. Surely they would be willing to admit that a loose sand may have this identical composition, and that as there is every degree of cohesion from this loose sand to a firmly compacted sand (that is, sandstone), the principal thing to look for is not so much the chemical constitution as its degree of cohesion. Now, the degree of cohesion is found by two methods:—(1) By immersing the stone in water and calculating the amount it absorbs; and (2) By subjecting it to a gradually increased thrusting stress. We have previously pointed out the advantages of the one method over the other, but it will be obvious that something more is yet required to make our investigation on durability complete. If the power of resisting deleterious agents, of a closely compacted sandstone (one consolidated by pressure alone) and of one having a siliceous matrix, were the same, all would be well, but the latter is by far the more durable kind of stone, and the best method of detecting these differences is by microscopic analysis.

The sandstones used in building are largely obtained from the carboniferous formation, though the quarries (exceedingly few in number) in the stone actually associated and intimately stratified with the coal-measures, do not produce such excellent materials as those in the more massive deposits of sandstones and grits of the period, by reason of their containing more or less argillaceous matter as well as iron. The following is a brief summary of the mode of occurrence of the deposits of the carboniferous period, which can be recognised, with modifications, in all parts of the country*:—

Coal Measures.

1. Red and grey sandstones, clays, and sometimes breccias, with occasional seams of coal.

2. Chief coal-bearing series of yellow sandstones, clays, and shales.

3. Gannister beds, flagstones, shales, and thin coals, with hard siliceous pavements.

Millstone grit, flagstones, and shales, with thin seams of coal.

Limestone Series.

1. Yoredale group of shales and grits, passing down into shales and limestones.

2. Thick limestone in the south and centre of England and Ireland passing northwards into sandstones, shales, and coals.

3. Lower limestone shale of south and centre of England,—the calciferous sandstone group of Scotland.

* See Geikie's "Text-Book of Geology" (1882), p. 737.

The above brief table will enable the student to see that the Carboniferous, unlike the Oolitic period, is very variable in character at its outcrop,—in other words, the long strip of carboniferous rocks stretching from Devonshire, in a north-north-easterly direction, roughly speaking, changes from a limestone into a sandstone as it reaches the northern counties and into Scotland, whereas the oolite running parallel with them for a considerable part of the distance maintains its limestone character almost from beginning to end. Thus it is that the chief sandstone quarries are situated in the northern counties, and Scotch buildings are almost entirely dependent upon them (and granites) for the material of which they are constructed.

We may mention, in passing, that the rocks belonging to the secondary epoch* (from which in England we obtain such a large proportion of our building materials), are represented in Scotland by a few insignificant patches, hardly worth noticing from an economic point of view.

We will now describe a few of the more important sandstone quarries in the United Kingdom.

Bramley Fall Stone.

This stone is named after the township of Bramley, near Leeds, where quarries have been worked for many centuries. Owing to the demand for the stone, several quarries have been opened along the valley of the Aire, offering great facilities of transport to all parts of the kingdom by means of the Aire and Calder Navigation, and by the Leeds and Liverpool Canal. We are informed that since the introduction of railways, the original Bramley Fall quarries have almost ceased working, but that the name has been perpetuated and now refers not only to stone in the district, but also to stone of a similar nature from quarries some distance from Bramley. It has, in fact, become a general term. Some of the largest quarries are at Calverley Wood, near Bradford; Duffield Bank, near Derby, where the stone is of a light brown colour, and of which Bishop Ryder's Church and St. Mary's Bridge, Derby, has been constructed. Others are at Fletcher Bank, Hayshaw Moor, Horsforth, Knaresborough, Little Eaton, Meanwood, and Weetwood (called Westwood in Blue Book), near Headingley. The stone at the last-mentioned place is of a light-brown colour, and has been used in Westminster Bridge, the Grimsby and Jarrow Docks, &c. There are numerous other small workings to which we will not refer.

The original Bramley Fall stone was a medium-grained sandstone of the Millstone grit series, and was remarkable both for strength and durability. The Abbey of Kirkstall, near Leeds, which was built in the twelfth century, and destroyed in that turbulent period of English history,—the Commonwealth,—is an example of the early use of this material. The stone in the ruins is still in a good state of preservation.

Architects frequently specify thin stone for templates, bases, steps, landings, and copings to be worked out of Bramley Fall, only 4 in. to 8 in. thick. Mr. Trickett says that this mistake has caused some quarrymen and producers to substitute inferior top stone for good rock, because it there occurs in thinner beds. He further says that thin stones cannot be obtained out of the best Bramley Fall rock except at a very wasteful expenditure of the stone.

Thus we find that, as a rule, it occurs in large blocks. It is cut with wedges, and, considering its hardness, is worked with facility, being largely used for general engineering works, docks, locks, engine-beds, bridges, large sluices, &c., both at home and abroad.

In the course of our inquiry, we have often met with the results of crushing, specific gravity, chemical analysis, and other tests in regard to this stone, more particularly in connexion with its comparison with other stones. In some cases the results were compared with limestones, which, as the student may now be aware, is an absurdity in itself, as it points to nothing of any value. In others elaborate results have been recorded, but the quarries from which the materials experimented upon were obtained were not stated, and so they were rendered useless. As far as our knowledge of the subject enables us to judge, the widely different kinds of stone known as Bramley Fall enable us to arrive at almost any result desired, from the highest character,—as showing durability,—to the lowest. We do not, in this connexion, refer to the stone which usually comes to London, and which, as a rule, is of tolerably good quality, but would rather take the stones as a class. Such latitude, of course, enables a competitor to quote whatever figures suit his purpose. Whenever the student, therefore, sees experiments recorded on Bramley Fall stones, not accompanied by an exact description of the quarries from which they were obtained, he had better put them aside as worthless.

* See p. 77, *ante*.

RECENT PATENTS.

ABSTRACTS OF SPECIFICATIONS.

15,436, Gullies and Traps. R. Oates and F. J. Green.

The improvements are in the direction of economy and to provide means for readily and easily cleansing the gullies and traps. The gully is made with a partition or diaphragm in a hole, through which a rod or cleaning instrument may be introduced. The hole is covered by a lid when not in use. The traps are made with an additional hole as an inlet for fresh air, and they may be used alone as a terminal trap or in combination with another trap, which is then called a continuation trap. This latter trap may also be made with an inlet for fresh air.

15,608, Movable Partitions, Doors, &c. D. and E. Glaister.

The idea of this invention is so to arrange the parts of movable partitions, doors, window-sashes, or shutters, that when one part is moved in one direction, say up or down, the corresponding part shall be moved in an opposite way. This is effected by a balanced arrangement of the separate parts of the partition or shutter.

15,609, Securing Doors, &c. D. and E. Glaister.

A second patent of the same inventors relates to an arrangement of the flooring around or near a doorway or means of exit, whereby a lever is depressed by the weight of the person coming along and the catch of the door is automatically released, causing the door to fly open. This is specially applicable to theatres and places where panics may possibly occur.

11,377, Roofing Tiles, &c. W. Bull.

This patent relates to the form of the roofing tile as well as to the machinery constructed to produce it. The object is to provide tiles exceptionally light, which can be readily joined in either cross or longitudinal section, and will keep comparatively cool even in hot climates; a further object being to produce the tiles rapidly, and at small cost. The tiles are somewhat similar in appearance to the bricks used for a damp course, having tubular openings running through them. The ends of the tiles are ingeniously adjusted, one end being made as a hook over, and the other under, so that, when brought together, they are effectually fastened.

11,775, Improved Tile Stove. J. P. Helles.

The principal improvement is in providing an increased radiating surface by altering the shape or form of the stove. Two cylinders are made one inside the other, and the hot air circulating between is given off by the outside radiating surface of the outside tube.

8,873, Paving and Building Stones, &c. E. Grach.

In stones for floors and ornamental work, undercut or intersected projections are made, which act like hooks, and catch in the mortar or cement used as a basis or foundation for the stones. When the mortar hardens, the stones or flags do not get loose, owing to the hold the hook-like projections have in the mortar or cement.

NEW APPLICATIONS FOR PATENTS.

Nov. 12.—14,637, F. Worrner, Fastener for French Windows, Doors, &c.—14,668, J. Watson, Ventilators.—14,674, W. Scott and Others, Portland Cement, &c.—14,692, E. Cowper, Locks, Latches, and Bolts.

Nov. 13.—14,755, T. Dewsberry, Circular Hole Metal Ventilator.

Nov. 15.—14,768, A. Day, Draught and Dust Preventer for Doors, &c.—14,782, R. Jay, Metal Cisterns, &c.—14,794, F. Anstey and E. Hoult, Fixing Door Knobs to Spindles.

Nov. 16.—14,837, H. Bromhead, Skylight or Fanlight Opener.—14,848, G. Barker, Ventilating Buildings.—14,880, H. Lake, Metallic Lathing.

Nov. 17.—14,838, J. Brown, Window Sash Fastenings.—14,915, W. Jones, Water Waste Preventer, 14,922, J. West, Water-closets.—14,934, T. Cook and W. Boyens, Raising, Lowering, and Holding Window Sashes.

Nov. 18.—14,972, T. Fawcett, Brick and Tile Pressing Machinery.—14,979, W. Blessley, Ironstoneware.—14,992, H. Walker and R. Carey, Hydraulic Lifts.

PROVISIONAL SPECIFICATIONS ACCEPTED.

11,121, H. Harris, Window-Fastenings.—11,509, T. Whitehead, Chimney Cowl and Ventilator.—12,031, M. Syer, Syphon Water-waste Preventer.—12,099, E. Gilles, Ventilator for Sash Windows.—13,597, J. Parsons, Fall Pipes and fixing same.—11,271, F. Bosshardt, Intercepting Noises caused on Floors and Excluding Draughts from Buildings.—11,889, F. Lyte, Pigments.—12,492, W. Wood and A. Simmonds, Treating the Surfaces of Wood to Imitate Stone.—13,045, J. Thropp, Carpenter's Braces.—13,056, A. Gray, Window-Fastenings.—13,537, D. Lyon, Flushing Apparatus and Water-waste Preventer for Water-closets, &c.—14,007, H. Campbell, Outside Shop-Window Lamps.—14,058, T. Messenger, Warming Buildings with Hot Water.—14,245, W. Stuttle, Hot-water Boiler for Heating Conservatories and Buildings.—14,322, J. Smeaton, Water-closets.—14,375, D. Burns, Chimney Cowls and Ventilators.

COMPLETE SPECIFICATIONS ACCEPTED.

Open to Opposition for Two Months.

14,730, J. Denny, Lock Blocks for the Construction of Fireproof Ventilating Ceilings, &c.—502, J. Jex Long, Open Fire-grates.—561, J. Stanley, Smoke-consuming Fire-places.—770, W. Benson and L. Gunning, Flooring Tiles, Bricks, &c.—977, J. Nichols, Nails.—2,777, C. Duncombe, Locks.—12,597, H. Treasure, Lock-up Ventilators.—13,088, E. Marland, Securing Chimney-pots.—15,613, T. Gray, Door Locks.—829, J. Stidder, Flushing Water-closet Pans.—842, W. Wardle and M. Shillito, Ventilating Fans.—2,072, E. Heward and J. Martin, Gully Traps.—11,590, E. Banfield, Indicating Apparatus for Water-closets, &c.

RECENT SALES OF PROPERTY.

ESTATE EXCHANGE REPORT.

NOVEMBER 12.

By BROAD, PRITCHARD, & WILTSHIRE.

Holloway—20, Seven Sisters-road, 74 years, ground-rent 30*l.*	£1,150
Witechapel-road—No. 79*a*, term 54 years, ground-rent 32*l.*	1,110

NOVEMBER 15.

By G. A. WILKINSON.

Cheapside—No. 69, freehold	14,050
Islington—Improved ground-rents of 60*l.*, term 58 years	1,290
Improved ground-rents of 30*l.* 10*s.*, term 33 years 40, 42, and 44, Cloudesley-road, and 22 and 24, Cloudesley-place, and improved ground-rents of 80*l.*, term 15 years	330
	1,400

By A. CHANCELLOR.

Richmond-hill—The freehold residence Gloucester House	2,710
1 and 2, Gloucester-villas, freehold	4,470

By NORRIS & SHOPPEE.

Sydenham—The residence Beaulieu, leasehold	450
The residence Beauville, leasehold	425

By GRAVES & SON.

Bayswater—15 and 17, Shrewsbury-road, 73 years, ground-rent 20*l.*	900
19, Shrewsbury-road, 73 years, ground-rent 10*l.*	750
1 and 75, Cornwell-road, 73 years, ground-rent 20*l.*	1,370
10, Shrewsbury-road, 69 years, ground-rent 8*l.*	625

NOVEMBER 16.

By RUSHWORTH & STEVENS.

Hyde Park—29, Park-lane, leasehold	4,000
Woolwich—126, High-street; 24, Thomas-street, five houses in Powis-street; 10 and 15, Hare-street; and ground-rents of 122*l.* 18*s.*, term 12 years	3,000

By TOBIN & SONS.

Forest-gate—A plot of freehold land	152
Bow—14 and 15, Gawthorne-street, 61 years, ground-rent 6*l.* 10*s.*	485

By P. D. TUCKETT.

Charing-cross—No. 3, Duke-street, freehold	4,500
8, Buckingham-street, freehold	2,200

By FAREBROTHER, ELLIS, CLARK, & CO.

Peckham—36 to 48 even, Blenheim-grove, freehold	2,000
1 and 2, Rochfort-cottages, freehold	600
Wood-green—1 and 2, Palace-road, freehold	270

By ROGERS, CHAPMAN, & THOMAS.

Pimlico—83, Cambridge-terrace, 51 years, ground-rent 9*l.*	500
66, Alderney-street, 45 years, ground-rent 8*l.*	550
117, Alderney-street, 46 years, ground-rent 9*l.*	600

NOVEMBER 17.

By HORNE, SON, & EVERSFIELD.

Westminster—21½, 22, and 23, Millbank and wharfage, 47 years, rent 320*l.*	100
Hyde Park—32, Sussex-gardens, 50 years, ground-rent 18*l.*	3,000

By A. & A. FIELD.

Homerton—39 to 47 odd, Holmbrook-street, 38 years, ground-rent 11*l.* 5*s.*	395
12, 14, and 16, Holmbrook-street, 35½ years, ground-rent 6*l.* 15*s.*	190
Stepney—54, Bromley-street, 23 years, ground-rent 2*l.*	245
Commercial-road, E.—18, Anthony-street, 14 years, ground-rent 2*l.* 6*s.* 6*d.*	120

NOVEMBER 18.

By BEADEL & CO.

Southend, Royal-terrace—Three plots of freehold land	950
Alexandria-street—Eleven plots of freehold land.	2,320
Three plots of freehold back land	790

By G. A. BICKERTON.

Westminster-grove—11 and 13, Kildare-terrace, 64 years, ground-rent 14*l.*	1,450

By MARLER & BENNETT.

Kensington—90, Ladbroke Grove-road, 77 years, ground-rent 12*l.*	650
Chelsea—16, Hasker-street, 57 years, ground-rent 5*l.*	455
Kilburn—3, Oxford-road, 73 years, ground-rent 8*l.*	500

By H. Rutley.

Regent's Park,—4, Fitzroy-road, 64 years, ground-rent 8*l.* 8*s.*	£510
Camden Town—116, Arlington-road, 81 years, ground-rent 5*l.*	295
Caledonian-road—14, 16, and 18, Bemerton-street, 54 years, ground-rent 18*l.*	905

By E. Robins & Hine.

Chiswick—Ground-rent of 45*l.*, reversion in 3 years	1,100
5 to 10, Devonshire-place, freehold	750
Hackney—Ground-rents of 56*l.*, term 27 years	725
Ground-rents of 50*l.*, term 27 years	650

By Newbon & Harding.

Islington—41, Gibson-square, 41 years, ground-rent 8*l.*	500
62, Ball's Pond-road, 65 years, ground-rent 6*l.* 10*s.*	725
163, Liverpool-road, 13 years, ground-rent 7*l.*	185
Pentonville—19 and 20, Baker-street, 25 years, ground-rent 10*l.* 10*s.*	305
Rotherhithe—1 to 4, William-street, 65 years, ground-rent 9*l.* 10*s.*	535
Dalston—20, Lenthall-road, 51 years, ground-rent 5*l.*	335
Farringdon-street—4, Bear-alley, freehold	370
Holloway—8, Mildmay Park, 65 years, ground-rent 4*l.*	505

November 19.

By A. Booth.

Camden-road, 1, Rochester-road, 56 years, ground-rent 6*l.*	710

By Baker & Son.

Finchley—Ground-rents of 60*l.*, reversion in 91 years	1,415
Ground-rents of 47*l.* 6*s.*, reversion in 93 years	1,130
Ground-rent of 13*l.*, reversion in 96 years	340
Four plots of land, 15*a.* 0*r.* 6*p.*, freehold	3,735
Woodford—1 to 5, Tower-houses, freehold	750
Croydon—1 and 3, Leyton-villas; 1 and 2, Sussex-villas; 1 and 3, Pembroke-villas; 1 and 2, Elgin-villas; 1 and 2, Rutland-villas; and 1 and 2, Eleanor-villas, freehold	2,000

MEETINGS.

Saturday, November 27.

Association of Municipal and Sanitary Engineers and Surveyors.—Meeting of the Lancashire and Cheshire District at Warrington. 11 a.m.

Monday, November 29.

Society of Arts (Cantor Lectures).—Mr. Lewis F. Day on "The Principle and Practice of Ornamental Design." I. 8 p.m.

Royal Academy.—Professor A. H. Church on "The Chemical Study of Old Painting and Drawings: Trials of Pigments." 8 p.m.

Tuesday, November 30.

Institution of Civil Engineers.—Renewed discussion on "Concrete as applied in the Construction of Harbours." 8 p.m.

Birmingham Architectural Association.—Mr. John W. Bradley on "Illuminated Books." 7·30 p.m.

Wednesday, December 1.

Architectural Union Company.—Twenty-ninth Annual General Meeting. 4 p.m.

Royal Academy.—Professor A. H. Church on "Classification of Pigments: Changes of Pigments." 8 p.m.

Society of Arts.—Adjourned discussion on Dr. C. Meymott Tidy's paper on "Sewage Disposal" (Sir F. Abel, F.R.S., in the chair). 8 p.m.

Friday, December 3.

Architectural Association.—Mr. T. Pridgin Teale, F.R.C.S., on "Fireplaces." 7·30 p.m.

Royal Academy.—Professor A. H. Church on "The Chemistry of some Selected and Restricted Palettes." 8 p.m.

Institution of Civil Engineers (Students' Meeting).—Mr. H. H. Dalrymple-Hay on "Ranging Circular Curves." 7·30 p.m.

Saturday, December 4.

Association of Public Sanitary Inspectors.—Mr. W. Hearne on "House Drainage in London." 6·30 p.m.

Miscellanea.

Liverpool Master Builders' Association.—The annual dinner of the members of this Association was held on Thursday, the 18th, at the Adelphi Hotel. The chair was occupied by Mr. J. Leslie, the President, and the company included, besides many members of the association, several well-known Liverpool architects, one of whom, Mr. E. Kirby, proposed the toast of the evening, "The Liverpool Master Builders' Association," remarking that as a member of the Architectural Society he could say that it deserved all the support it could get from that society and from architects individually, because it would be impossible for architects to carry out satisfactorily the commissions with which they were entrusted were it not for the aid which they received from the members of the Association. It also deserved consideration from the inhabitants and the capitalists of the city; and it was a high honour to the association that Liverpool had twice chosen one of its members, Sir David Radcliffe, as its chief magistrate, and that the present President of the Association had filled the office of Mayor of Bootle. He hoped that the coming year would see the clouds roll by as regarded the building trade. Mr. Litt responded. He said the objects of the Association were not to interfere with working men, but, in carrying out a most important business, to look to the general good of the whole community.

Sale of Building Land at Leytonstone. On Monday evening Messrs. Baker & Sons submitted for sale, at the Thatched House Hotel, Leytonstone-road, 238 plots of freehold building land, forming a portion of the Cann Hall Estate, belonging to the Imperial Property Investment Company. The estate, which occupies an area of about fifty acres, is situated at Leytonstone, near Stratford, within a few minutes' walk of the Maryland Point and Forest Gate stations of the Great Eastern Railway, and extends eastward from Leytonstone-road to the boundary of Wanstead Flats. It has been laid out for the erection of upwards of 1,500 houses and shops, twelve roads, each 40 ft. in width, having been formed on the estate, and the main drainage extending over the whole of it. A large portion of the estate has already been sold, and building is now actively proceeding. There was a large attendance at Monday's sale. The auctioneer, having alluded to the very large demand for medium-sized houses in the neighbourhood, the sale proceeded. The whole of the lots offered have frontages of from 15 ft. to 16 ft., and depths of from 80 ft. to 100 ft. The first portion of the property submitted comprised twenty shop-plots, having frontages to the Cann Hall-road, one of the principal business thoroughfares on the north boundary of the estate, but after some of the plots having been sold at 77*l.* each, the auctioneer, on behalf of the vendors, withdrew most of the remaining lots facing that road, stating that the lowest price at which they could be sold was 80*l.* each. A corner shop-plot having a frontage to Cann Hall-road of 16 ft., and a return frontage of 105 ft. to Bourne-road, was sold for 90*l.* Seven adjoining plots, having similar frontages, were sold for 82*l.* each. These were followed by the sale of several lots in Ramsay-road, at prices varying from 55*l.* to 62*l.* each. Two plots having frontages of 21 ft. to Melbourne-road, and a depth of 110 ft., were sold for 76*l.* each, whilst six other plots in Trumpington-road, 16 ft. frontage and a depth of 70 ft., realised 54*l.* each. Several plots of a like area in Thorpe-road adjoining were sold at from 55*l.* to 56*l.* each. Altogether about one half of the plots were sold.

Fees of District Surveyors.—It appears from a return made to the Metropolitan Board of Works that the total gross fees received by District Surveyors during the year 1885 amounted to 46,792*l.* and some odd shillings and pence, showing a falling-off of upwards of 5,000*l.* from the total amount received during the previous year. The gross fees received in forty-six districts varied from 8*l.* to 579*l.*: in one of these districts the receipts did not amount to 100*l.*; in six districts the receipts amounted to less than 300*l.* each; in fourteen the amounts were less than 400*l.* each; in sixteen less than 500*l.* each; and in nine less than 600*l.* each. In twenty-five districts the receipts ranged from 621*l.* to 1,733*l.*, which last amount was the maximum. The smallest return is from the District of the detached part of Clerkenwell near Muswell Hill, which produced 8*l.* 10*s.* only, and the most remunerative district is the district of St. Giles, Camberwell, which produced 1,733*l.* It is evident from these figures that the building trade has shared in the prevailing commercial depression.

Cantor Lectures.—The first course of Cantor Lectures at the Society of Arts is announced to be on the "Principles and Practice of Ornamental Design," by Mr. Lewis Foreman Day. The first lecture, on Monday evening next, November 29, will deal with the anatomy of pattern. The subject of the second and third lectures will be the distribution of ornamental design and the fitness of ornamental form respectively, while the fourth and concluding lecture will treat of natural form and ornamental treatment. These lectures are open to members of the Society of Arts, who have also the privilege of introducing friends. A limited number of tickets are available for the use of art-workers, actually employed in any handicraft connected with the decorative arts. Application for them should be made to the Secretary of the Society.

Mr. Browning's Proposed Residence at Venice.—Mr. Browning is happily quit of his almost completed purchase of the Palazzo on the Grand Canal at Venice. It proved on inspection that all the foundations were in a dreadful condition, and that an enormous expense would have been involved to render the place habitable by persons with English ideas of comfort and decency.—*World.*

British Archæological Association.—A meeting of this Association was held on Wednesday, November 17th, the Rev. Prebendary Scarth in the chair. Admiral Tremlett announced the discovery of a sepulchre, near Carnac, having the chambers connected by passages, the sides of which were formed of upright slabs of stone. Mr. Loftus Brock, F.S.A., exhibited a series of penates from Cyprus. Mr. Irvine sent sketches of several recently-discovered sepulchral slabs covered with patterns of Saxon date, at Market Deeping and its locality. Mrs. Henry forwarded for exhibition some prehistoric relics found on the side of Helvellyn, about midway up. The chairman described some of the curious Saxon crosses at Gainford and Darlington Churches. Mr. Thomas Blashill exhibited a series of photographs of some of the sarcophagi of Rome, of Classic and Christian times; also three of those in the Museum at Arles, one of which is similar to another in the Church of St. Trophime. A paper was then read by Mr. Thomas Morgan, F.S.A., on the results of the recent congress at Darlington, the general features of the places visited being passed in review, and attention drawn to the lines of the Roman roads intersecting the district. The second paper was by Mr. C. Lynam, on Escombe Church, the recently-discovered Saxon buildings, which was visited during the congress. A third paper was then read by Mr. E. Walford, on "The Early Literary History of Darlington," attention being specially called to a local newspaper published for a few weeks only in 1772.

Metropolitan Drawing Classes.—We are asked to mention that Prince Henry of Battenberg will present to the students of the Metropolitan Drawing Classes the Queen's prizes awarded by the Science and Art Department. The ceremony will be held in the Guildhall, on Wednesday evening, December 1st, at eight o'clock, under the presidency of the Right Hon. the Lord Mayor, who will probably be supported by the Sheriffs, the Bishop of London, Sir P. Magnus, John McGregor ("Rob Roy"), and other members of the Local Science Committees. The prizes have been gained chiefly by working men engaged in the building and engineering trades. About 800 artisans, after the labours of the day, attended these classes for study and self-improvement, in order to become more efficient workmen. The work of the present session has already commenced in twenty-eight centres.

Gas and Water Rating.—The Scientific Publishing Company announce the forthcoming publication of a work on Rating Gas and Water Undertakings, and on the Law of Parochial and County Assessment, by Mr. William Griffith, barrister-at-law. The book will be divided into two parts, Part I. dealing with the principles and rules used in rating gas and water undertakings, and Part II. with the methods of making and enforcing payment of parochial and county rates. An appendix will be added, giving a *précis* of Acts of Parliament relating to valuation assessment, and rating of gas and water undertakings.

Dissolution of Partnership.—We are asked to mention that the partnership subsisting between George Wright, Alfred George Wright, and William Austin Wright, trading as George Wright & Sons, of 113, Queen Victoria-street, London, E.C., has been dissolved by mutual consent. Mr. George Wright retires from the firm, and the business will in future be carried on by Messrs. A. G. & W. A. Wright under the old style and title of "George Wright & Sons."

The Church of St. Mary, East Leake, Nottinghamshire, was re-opened on the 18th inst., after extensive reparation. The Decorated windows in the chapel in the south aisle of the nave, almost unique and of very interesting workmanship, have been made secure, and the eastern one filled with stained glass by Mr. C. E. Kempe. The builder was Mr. W. Belton, of Leake, and the architect, Mr. W. S. Weatherley, of London.

PRICES CURRENT OF MATERIALS.

TIMBER.	£. s. d.	£. s. d.
Greenheart, B.G. ....ton	6 10 0	7 0 0
Teak, E.I. ....load	9 0 0	14 0 0
Sequoia, U.S. ....foot cube	0 2 4	0 2 7
Ash, Canada ....load	3 0 0	4 10 0
Birch ,, ...	2 5 0	3 10 0
Elm ,, ...	3 10 0	4 10 0
Fir, Dantzic, &c.	1 10 0	4 0 0
Oak ,, ...	2 10 0	4 10 0
Canada	3 0 0	6 0 0

TIMBER (*continued*).	£. s. d.	£. s. d.
Pine, Canada red	2 0 0	3 10 0
,, yellow	2 5 0	4 0 0
Lath, Dantsic ..... fathom	3 0 0	5 0 0
St. Petersburg	4 0 0	5 10 0
Wainscot, Riga ..... log	2 15 0	4 0 0
,, Odessa, crown	3 5 0	3 7 6
Deals, Finland, 2nd and 1st...std.100	7 0 0	8 0 0
,, 4th and 3rd	6 0 0	6 10 0
Riga	5 10 0	7 0 0
St. Petersburg, 1st yellow	8 10 0	14 0 0
,, 2nd ,,	7 0 0	8 0 0
,, white	7 0 0	10 0 0
Swedish	6 0 0	15 0 0
White Sea	7 0 0	17 10 0
Canada, Pine, 1st	17 0 0	29 0 0
,, ,, 2nd	11 0 0	17 0 0
,, ,, 3rd, &c.	6 0 0	8 0 0
,, Spruce, 1st	8 0 0	11 0 0
,, 3rd and 2nd	5 0 0	7 10 0
New Brunswick, &c.	5 0 0	7 0 0
Battens, all kinds	4 0 0	12 0 0
Flooring Boards, sq. 1 in., Prepared, first	0 9 0	0 13 0
Second	0 7 6	0 8 6
Other qualities	0 5 0	0 7 0
Cedar, Cuba ..... foot	0 0 3	0 0 3½
Honduras, &c.	0 0 2½	0 0 3½
Australian	0 0 2	0 0 3
Mahogany, Cuba	0 0 4	0 0 7
St. Domingo, cargo average	0 0 4	0 0 7
Mexican ,,	0 0 3½	0 0 4½
Tobasco ,,	0 0 4	0 0 6½
Honduras ,,	0 0 4	0 0 6½
Maple, Bird's-eye	0 0 6	0 0 8
Rose, Rio ..... ton	7 0 0	10 0 0
Bahia	6 0 0	10 0 0
Box, Turkey	5 0 0	17 0 0
Satin, St. Domingo ..... foot	0 0 6	0 0 10
Porto Rico	0 0 7	0 1 0
Walnut, Italian	0 0 4	0 0 5

METALS.	£. s. d.	£. s. d.
Iron—Bar, Welsh, in London...ton	4 7 6	4 15 0
,, ,, in Wales	4 2 6	4 7 6
,, Staffordshire, London	5 10 0	6 0 0
Sheets, single, in London	6 15 0	8 10 0
Hoops ,,	6 0 0	7 0 0
Nail-rods ,,	5 15 0	6 10 0
Copper—		
British, cake and ingot ..... ton	44 0 0	45 0 0
Best selected	45 0 0	0 0 0
Sheets, strong	51 10 0	52 0 0
,, India	49 10 0	0 0 0
Chili, bars	40 2 6	40 10 0
Yellow Metal ..... lb.	0 0 4	0 0 4½
Lead—		
Pig, Spanish ..... ton	12 15 0	12 17 6
English, common brands	13 2 6	0 0 0
Sheet, English	13 17 6	14 2 6
Spelter—		
Silesian, special ..... ton	14 10 0	14 12 6
Ordinary brands	14 7 6	14 10 0
Tin—		
Straits ..... ton	102 5 0	0 0 0
Australian	102 15 0	0 0 0
English ingots	105 10 0	0 0 0
OILS.		
Linseed ..... ton	19 17 6	20 5 0
Cocoanut, Cochin	37 10 0	0 0 0
Ceylon	27 0 0	0 0 0
Palm, Lagos	35 10 0	0 0 0
Rapeseed, English pale	22 0 0	0 0 0
,, brown	20 12 6	0 0 0
Cottonseed, refined	19 0 0	20 0 0
Tallow and Oleine	25 0 0	45 0 0
Lubricating, U.S.	6 0 0	10 0 0
,, refined	8 0 0	13 0 0
Turpentine—		
American, in casks ..... cwt.	1 8 0	0 0 0
Tar—		
Stockholm ..... barrel	0 15 0	0 15 6
Archangel	0 10 6	0 11 0

COMPETITIONS, CONTRACTS, & PUBLIC APPOINTMENTS.

Epitome of Advertisements in this Number.

COMPETITIONS.

Nature of Work.	By whom required.	Premium.	Designs to be delivered.	Page.
New Public Offices	Willesden Local Board	50*l.* and 25*l.*	Jan. 31st	i.
Sewage System	Cleethorpes U.S.A.	3*l.*, 2*l.*, and 1*l.*	Not stated	i.

CONTRACTS.

Nature of Work, or Materials.	By whom required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.	Page.
Supply of Mahogany	Great Western Ry. Co.	*Official*	Nov. 30th	ii.
York Stone	Folkestone Corporation	A. W. Conquest	Dec. 4th	ii.
Norwegian Granite, Edge Kerb, &c.	do.	do.	do.	ii.
Sewering and Making-good Road	Hornsey Local Board	T. De Courcy Meade	Dec. 6th	ii.
Furniture, Chairs, Carpets, &c.	Chelsea Vestry	G. R. Strachan	Dec. 7th	xviii.
Second-hand Broken Granite	Southend Local Board	*Official*	do.	ii.
Stores and Materials	Great Northern Ry. Co.	do.	Dec. 9th	ii.
Erection of Eight Cottages, &c.	Admiralty	do.	Dec. 10th	i.
Works and Materials	St. George's, Hanover-square, Vestry	G. Livingstone	Dec. 11th	ii.
Erection of Baths, &c.	Ealing Local Board	Chas. Jones	Dec. 13th	ii.
Building Cottages	Southampton Corporatn	W. Matthews	Dec. 14th	ii.
New Casual Wards	Wndswrth & Claphm Un	T. W. Aldwinckle	Dec. 16th	ii.
Alterations, &c., to Old Workhouse, &c.	do.	do.	do.	ii.
Stores	Crystal Palace Co.	*Official*	Dec. 20th	xviii.
Nine-Floor Granary	Bristol Corporation	J. W. Girdlestone	Dec. 28th	ii.
Erection of Villas, New Barnet		Blake & Farrar	Not stated	ii.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.	Page.
Sanitary Inspector	Vestry of St. George the Martyr, Southwark	130*l.*	Dec. 4th	xvi.
Building Inspector	Edmonton Local Board	120*l.*	Dec. 13th	xvi.

TENDERS.

BATTERSEA.—For roadmaking, kerbing, and channelling in Batterses. Mr. J. T. Pilditch, surveyor:—

Honeywell-road.

Hindle & Morrish	£527	0	0
Marshall	500	0	0
Turner & Son	475	0	0
H. R. Trehearne & Co. (accepted)	473	0	0
Farthing & Co.	374	15	4

[Surveyor's estimate, 540*l.*]

Mallinson-road.

Hindle & Morrish	£324	0	0
Marshall	300	0	0
Turner & Son	290	0	0
H. R. Trehearne & Co.	246	0	0
Farthing & Co. (accepted)	244	4	11

[Surveyor's estimate, 324*l.*]

Wycliffe-road.

Hindle & Morrish	£602	0	0
Marshall	520	0	0
H. R. Trehearne & Co.	493	0	0
Turner & Son	484	0	0
Farthing & Co. (accepted)	456	5	10

[Surveyor's estimate, 589*l.*]

Balham Park-road.

J. S. Gabriel	£713	10	0
S. & J. Saunders	513	12	0
Cooke & Co.	495	0	0
J. Neal	485	0	0
Farthing & Co.	451	13	8
Turner & Son	418	0	0
H. R. Trehearne & Co. (accepted)	411	0	0

[Surveyor's estimate, 517*l.*]

BATTERSEA.—For roadmaking, &c. (*continued*):—

Morella-road.

J. S. Gabriel	£1,384	0	0 !
S. & J. Saunders	431	18	0
Farthing & Co.	407	10	8
Cooke & Co.	405	0	0
J. Neal	399	0	0
Turner & Son	363	0	0
H. R. Trehearne & Co. (accepted)	352	0	0 !

[Surveyor's estimate, 467*l.*]

Bennerley-road.

J. S. Gabriel	£342	0	0
Cooke & Co.	284	0	0
Farthing & Co.	279	16	0
J. Neal	279	0	0
S. & J. Saunders	271	14	0
Turner & Son	269	0	0
H. R. Trehearne & Co. (accepted)	252	0	0

[Surveyor's estimate, 306*l.*]

Salcott-road.

J. S. Gabriel	£1,428	0	0 !
Farthing & Co.	264	6	8
S. & J. Saunders	256	15	0
Cooke & Co.	257	0	0
J. Neal	245	0	0
H. R. Trehearne & Co.	239	0	0
Turner & Son (accepted)	233	0	0 !

[Surveyor's estimate, 287*l.*]

Coleford-road.

J. S. Gabriel	£190	0	0
Farthing & Co.	173	5	6
S. & J. Saunders	159	10	0
H. R. Trehearne & Co.	158	0	0
Cooke & Co.	155	0	0
J. Neal	152	0	0
Turner & Son (accepted)	143	0	0

[Surveyor's estimate, 191*l.*]

BROMLEY-BY-BOW.—For erecting stables in Atholstreet, Bromley, for Mr. G. T. Warman. Messrs. Clarkson, Great Ormond-street, architects:—

Holland	£593	0	0
Limm	545	0	0
Walker	526	0	0
Salt	470	0	0
Buckland (accepted)	467	4	0

CROMER (Norfolk).—For completing the drainage of the town of Cromer, Norfolk, and for extension of iron outfall sewers. Mr. J. C. Melliss, engineer, Gresham House:—

	Drainage.	Outfall.
Jas. F. W. Bray, Great Yarmouth	£2,480 0 0	..... —
H. Vickery, Gaywood, King's Lynn	2,337 18 6	..... —
T. Tilley & Sons, Walbrook*	2,310 18 0	..... —
R. Finnegan, Northampton	1,827 10 0	..... —
J. Neave, Swafield, North Walsham	1,772 0 0	..... £419
R. Cowdery, Newent, Gloucestershire	1,756 0 0	 150
H. Potter, Lower Clapton	1,497 0 0	 315
Bardell Bros., King's Lynn†	1,441 0 0	..... —
G. E. Child & Son, Southwold	—	..... † 250
A. Dodman, King's Lynn	—	 320

* For both contracts. † Accepted.

EDMONTON.—For repairs and painting to ten houses at Tillotson-road, Edmonton, for the Directors of the Horsham and Crawley Building Society. Mr. Wm. Buck, surveyor, Horsham:—

Emmett, Edmonton	£520	0	0 !
Channing, Gibson-square	385	0	0
Bone, Camden Town	360	0	0
Wood, Kensington	340	0	0
Peters, Horsham	340	0	0
Barber & Co., Clapton	330	0	0
Barlow & Roberts, Ebury-street	310	0	0
Sharp, Horsham	302	0	0
Wilson, Leyton	296	0	0
Cromwell, Leytonstone	294	0	0
Hallett & Co., Paddington	276	0	0
Burman & Sons, Enfield	275	0	0
Brown, Mile-end	270	0	0
Hobbs & Son, Enfield	270	0	0
Alexander, Homerton	268	0	0
Wenborn, Blackheath	258	0	0
Jolly, South Hackney	258	0	0
Chandler, Edmonton	251	0	0
Buckeridge, South Kensington	250	0	0
Harrison & Crabb, Enfield	249	0	0
Harwood & Co., Piccadilly	245	0	0
Reddish, Brixton	239	0	0
Weston, Wood-green	235	0	0
Mills, Hammersmith	226	0	0
Derby, West India Dock-road	223	0	0
Webb, Stratford	212	0	0
Marsden, North Finchley	195	0	0
Bishopp Bros., Essex-road (accepted)	177	0	0 !

KINGSTON-ON-THAMES.—For the erection of a hospital for infectious diseases, Tolworth, Long Ditton, Surrey. Messrs. Jacomb, Gibbon, & Woodroffe, architects, Verulam-buildings, Gray's Inn. Quantities by Messrs. Northcroft, Son, & Neighbour, Charing-cross:—

Webb Bros., Shepherd's-bush	£13,510	14	8
E. Jarvis, Banbury	11,473	0	0
Mudie, Surbiton	10,635	0	0
J. Wheeler, Kingston	10,520	5	7
J. H. Jarris, Surbiton	10,464	0	0
Adkin Bros., Surbiton	10,201	0	0
Gibbin & Son, Westbourne-grove	10,035	7	0
Church & Co., Coleman-street	9,788	0	0
Hickinbotham, Teddington	9,707	0	0
Wheatley & Son, East Moulsey	9,698	4	11
Oldridge & Son, Kingston	9,667	0	0
Craske, Brompton	9,609	0	0
Botterill, Reading	9,635	10	0
R. & E. Evans, Peckham	9,207	0	0
Wall Bros., Kentish Town	9,120	0	0
Piller, Teddington	8,959	0	0
Sargent, Hackney	8,944	0	0
Scase & Son, Surbiton	8,930	0	0
Higgs & Hill, Lambeth	8,888	0	0
Stevens & Bastow, Bristol	8,846	0	0
Judd, Kingston	8,807	0	0
Kirk & Randall, Woolwich	8,760	0	0
Stevenson, Bishopsgate-street	8,749	0	0
Baylis, Highbury	8,632	10	0
Collinson, Teddington	8,525	0	0
Kirk Bros.	8,490	0	0
Parker, Peckham	8,475	0	0
Turtle & Appleton, Wandsworth	8,425	0	0
Crook, Southampton	8,392	0	0
Brown & Co., Camberwell	8,390	0	0
Braid, Chelsea	8,380	0	0
Holloway, Lavender-hill	8,335	0	0
Peters, Horsham	8,294	0	0
Johnson, Wandsworth	8,282	0	0
Knight, Morden	8,170	0	0
Harris, Sutton	8,045	0	0
Oldrey & Co., Bosworth-road	7,977	0	0
Chas. Wall, Chelsea*	7,850	0	0
J. Reynolds, Harrow	6,844	0	0

* Accepted conditionally.

LONDON.—For works at the King's Arms Tavern, Aldersgate-street. Mr. R. A. Lewcock, architect, Bishopsgate-street Within:—

Pewterers' Work.

Ungar	£210	6	10
Helliag	207	0	0
Sanders & Son	182	10	0

Gasfittings.

Biggs	£87	0	0
Dix	85	0	0
Steadman	76	10	0
Christian	76	0	0
Ungar	51	16	0

LONDON.—For pewterers' work at the Two Brewers, Buckingham Gate, for Mr. W. Raven. Mr. H. I. Newton, architect, Queen Anne's Gate:—

J. Warne	£152	0	0
H. Warne	138	0	0
Heath (accepted)	117	0	0

Gasfitting Work.

Vaughan & Brown	164	0	0
W. Winn (accepted)	155	0	0

LONDON.—For sanitary improvements and general repairs at 39, Eccleston-square, for Mr. Augustus C. Scovell. Mr. Mark H. Judge, architect :—

H. Toten & Sons (accepted)	£290	0	0

LONDON.—For sanitary improvements, alterations, and additions at 16, Grosvenor-place, for Lieut.-Colonel Hozier. Mr. Mark H. Judge, architect, Park-place-villas :—

Drainage Contract.

Sprake & Foreman (accepted)	£201	0	0

Plumbing Contract.

Joseph Hume (accepted)	350	0	0

Hot-Water and Fire Services.

Thomas Boulting (accepted)	365	11	0

LOWER CLAPTON.—For additions to schools, Rendlesham-road, Lower Clapton, in the Hackney Division, for the School Board for London. Mr. T. J. Bailey, architect. Quantities by Mr. T. T. Green :—

Williams	£7,084	13	9
Sharmur	5,294	0	0
Hicks	4,995	15	0
Taylor	4,948	0	0
Stimpson & Co.	4,813	0	0
Godfrey & Son	4,800	0	0
Atherton & Latta	4,600	0	0
W. Johnson	4,579	0	0

LUTON.—For paving and roadmaking, for the Town Council of the Borough of Luton. Mr. W. H. Leete, Borough Surveyor :—

Aston-road.

Capper & Co., St. Alban's	£200	0	0
Pryor, Luton	195	0	0
Kingham, Luton	179	0	0
Wright, Luton	174	15	6
Dunham & Son, Luton	172	0	0
Waller, Luton	160	0	0
Haselgrove, Luton and St. Alban's	147	0	0

Cromwell-road.

Capper & Co.	£830	0	0
Pryor	730	0	0
Haselgrove	695	0	0

Hillside-road.

Ford	£240	0	0
Dunham & Son	230	0	0
Capper & Co.	230	0	0
Pryor	195	0	0
Waller	184	0	0
Haselgrove	183	15	0

Tavistock-street.

Capper & Co.	£500	0	0
Wright	480	0	0
Dunham & Son	475	0	0
Pryor	430	0	0
Haselgrove	403	0	0

Hibbert-street and Langley-street.

Wright	£599	2	6
Capper & Co.	575	0	0
Dunham & Son	565	0	0
Waller	550	0	0
Pryor	550	0	0
Haselgrove	495	0	0

Arthur-street.

Kingham	£235	0	0
Capper & Co.	230	0	0
Waller	225	0	0
Dunham & Son	225	0	0
Wright	219	0	0
Pryor	200	0	0
Haselgrove	197	0	0

NOTTINGHAM.—For the erection and completion of proposed additions to Albany Works, Carlton-road, Nottingham, for Mr. Joseph Wright. Mr. Herbert Walker, C.E., architect, Nottingham :—

Wheatley & Maule	£1,439	0	0
J. H. Clarke, Loughborough *	1,353	0	0
W. Bains	1,339	11	0
Evans & Woodcock	1,320	0	0
T. Cuthbert	1,318	0	0
J. Turton	1,315	0	0
E. Hind	1,309	0	0
H. Vickers	1,299	0	0
J. F. Price	1,290	0	0
Wool Bros.	1,290	0	0
G. Bell & Sons	1,262	0	0
H. Scott (accepted)	1,260	0	0

* The others are of Nottingham.

Ironwork.

G. R. Cowen & Co., Nottingham	£194	12	0
Butterley Iron Co., Alfreton	190	1	8
Goddard & Massey, Nottingham	179	17	6
Stanton Iron Co., Alfreton (accepted)	170	3	7

SOMERSET.—For sanitary improvements and new system of drainage, at Sutton Court, for Sir Edward Strachey, Bart. Mr. Mark H. Judge, architect, 8, Park-place-villas :—

Edward Colston (accepted)	£257	15	0

WANDSWORTH.—For the erection of chapel in Mallinson-road, Bolingbroke-grove, Wandsworth, for the Committee of the London Chapel Extension Fund. Mr. E. Speed, architect, Queen Victoria-street. Quantities by Messrs. Evans & Deacon, Adelaide-street, Charing-cross :—

J. D. Hobson	£4,064	0	0
Laing & Son	3,940	0	0
O. Craske	3,419	0	0
Macey & Sons	3,397	0	0
G. Jervis Smith	3,279	0	0
W. Johnson	3,151	0	0
J. Holloway*	3,175	0	0

* Accepted subject to reductions.

WILLESDEN.—For drainage works at Willesden, for the Metropolitan Railway Company :—

John Brookes, Watford	£1,129	19	0
Jos. Mears, Collingwood-road	1,048	0	0
J. Pizzey, Hornsey	925	0	0
Geo. Felton, Kilburn	909	0	0
Geo. Butler, Camberwell-road	870	0	0
Nowell & Robson, Kensington	868	0	0
Rowland Bros., Fenny-Stratford	819	0	0
R. Finnegan, Northampton	800	0	0
J. G. B. Marshall, Brighton	800	0	0
W. Neave & Son, Paddington *	732	0	0
Jas. Young, Buckhurst-hill	723	8	8

* Accepted.

SPECIAL NOTICE.—Lists of Tenders frequently reach us too late for insertion. They should be delivered at our office, 46, Catherine-street, W.C., *not later than Four p.m.* on THURSDAYS.

TO CORRESPONDENTS.

Registered Telegraphic Address, "THE BUILDER, LONDON."

W. K.—M. O.—A. H. C.—H. R.—R. F.—J. H. S. (we should never advise the acceptance of a tender so low that it is manifest that little or no profit could fairly be made. The inevitable consequence is that the profit is made unfairly, in one way or another).—C. R. B. (thanks).—J. H.—Bewick (we cannot inform you).

All statements of facts, lists of tenders, &c., must be accompanied by the name and address of the sender, not necessarily for publication.

We are compelled to decline pointing out books and giving addresses.

NOTE.—The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors.

We cannot undertake to return rejected communications.

Letters or communications (beyond mere news-items) which have been duplicated for other journals, are NOT DESIRED.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; all communications relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and not to the Editor.

PUBLISHER'S NOTICES.

Registered Telegraphic Address, "THE BUILDER, LONDON."

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DOUGLAS FOURDRINIER, Publisher,
Addressed to No. 46, Catherine-street, W.C.

Advertisements for the current week's issue must reach the Office before THREE o'clock p.m. on THURSDAY.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, &c. left at the Office in reply to Advertisements, and strongly recommends that of the latter COPIES ONLY should be sent.

SPECIAL.—ALTERATIONS in STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same, must reach the Office before TEN o'clock on WEDNESDAY mornings.

PERSONS Advertising in "The Builder," may have *Replies addressed to the Office, 46, Catherine-street, Covent Garden, W.C. free of charge.* Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage.

AN EDITION Printed on THIN PAPER, for FOREIGN CIRCULATION, is issued every week.

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"THE BUILDER" is supplied DIRECT from the Office to residents in any part of the United Kingdom at the rate of 19s. per annum PREPAID. To all parts of Europe, America, Australia, and New Zealand, 26s. per annum. To India, China, Ceylon, &c. 30s. per annum. Remittances payable to DOUGLAS FOURDRINIER, Publisher, No. 46, Catherine-street, W.C.

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RANDELL, SAUNDERS, & CO., LD., CORSHAM, WILTS.

Bath Stone.

BEST QUALITY OF ALL KINDS.

PICTOR & SONS, BOX, WILTS. [ADVT.

Doulting Freestone and Ham Hill Stone of best quality, in blocks, or prepared ready for fixing. An inspection of the Doulting Quarries is respectfully solicited; and Architects and others are CAUTIONED against inferior stone. Prices, delivered to any part of the United Kingdom, given on application to CHARLES TRASK & SONS, Norton-sub-Hamdon, Ilminster, Somerset.—Agent, Mr. E. WILLIAMS, No. 16, Craven-street, Strand, W.C. [ADVT.

Doulting Free Stone HAM HILL STONE, BLUE LIAS LIME (Ground or Lump), For prices, &c., address S. & J. STAPLE, Quarry Owners, Stone and Lime Merchants, Stoke-under-Ham, Ilminster. [ADVT.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 38, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds, and milk-rooms, granaries, tun-rooms, and terraces. [ADVT.

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Seyssel, Patent Metallic Lava, and White Asphaltes.
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Office:
No. 90, Cannon-street, E.C. [ADVT

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Manufacturers of

COLLINGE'S PATENT HINGES, LEVER, SCREW, & BARREL BOLTS,
Self-Acting "FALL DOWN" GATE STOPS,
and IMPROVED GATE FITTINGS of every Description
36A, BOROUGH ROAD,
DISCOUNT TO BUILDERS. LONDON, S.E.

BRABY'S PATENT GLAZING.

GLASS SET FREE,

ALLOWING EXPANSION AND CONTRACTION, AND PRECLUDING BREAKAGE.

ABSOLUTELY WATERTIGHT. PAINTING AND PUTTY SUPERSEDED.

OVER THREE MILLION FEET FIXED.

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